

**UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF VIRGINIA**

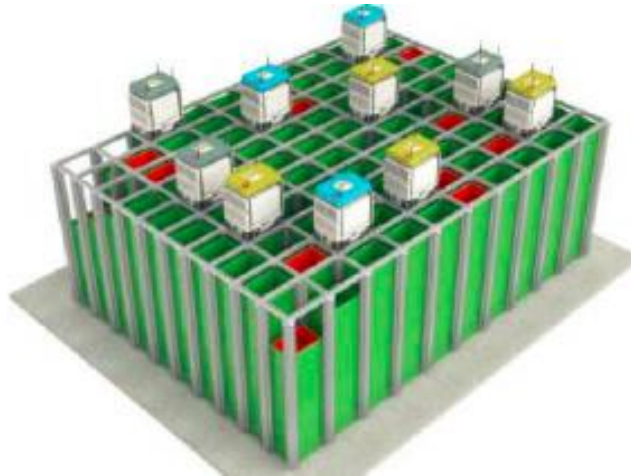
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| OCADO GROUP PLC, |) | Case No. _____ |
| OCADO SOLUTIONS LTD., and |) | |
| OCADO SOLUTIONS USA INC., |) | |
| |) | |
| Plaintiffs, |) | JURY TRIAL DEMANDED |
| v. |) | |
| |) | |
| AUTOSTORE AS, |) | |
| AUTOSTORE TECHNOLOGY AS, |) | |
| and AUTOSTORE SYSTEM INC., |) | |
| |) | |
| |) | |
| Defendants. |) | |
| |) | |

COMPLAINT

Plaintiffs Ocado Group plc, Ocado Solutions Ltd., and Ocado Solutions USA Inc. (together, “Ocado” or “Plaintiffs”) allege the following in support of their claims against Defendants AutoStore AS, AutoStore Technology AS, and AutoStore System Inc. (together, “AutoStore” or “Defendants”):

INTRODUCTION

1. With a relevant market share in excess of 90%, AutoStore unquestionably holds monopoly power in the market for cubic automated storage and retrieval systems (“Cubic AS/RS”). Cubic AS/RS are dense modular storage cubes—like a large Rubik’s cube containing inventory items—and robots moving on top of the cube retrieve items, pulling them up vertically from a storage column, and then delivering the items to picking stations for assembly of customer orders. The following graphic illustrates Cubic AS/RS:



2. Cubic AS/RS stands apart from other forms of automated order management—*e.g.*, conveyor belt systems and robotic cranes that select items from warehouse shelves—because, among other things, Cubic AS/RS provides (i) high storage density (and attendant cost savings), and (ii) extremely quick, safe, and accurate order fulfillment. The robots moving on top of a storage cube act at the direction of “air traffic control” technology that optimizes their travel paths, which enables them to store and retrieve items rapidly and accurately. Merchants that experience high throughput—*e.g.*, online grocery merchants that need to handle thousands of multi-item orders in a matter of hours—are increasingly turning to Cubic AS/RS as a solution, especially as online shopping increases dramatically. Relative to Cubic AS/RS, other kinds of automated order processing systems are not reasonably substitutable, especially for high-throughput merchants.

3. Between January 2017 and October 2020—a period during which AutoStore was sold to the private equity firm EQT and then on-sold to another private equity firm THL—AutoStore transitioned from holding monopoly power in Cubic AS/RS to illegally maintaining that monopoly power by (i) obtaining several U.S. patents through fraud on the U.S. Patent and Trademark Office (“U.S. PTO”), and (ii) wrongfully asserting those fraudulently obtained patents against Ocado in multiple forums. Ocado became the target of AutoStore’s unlawful activity

because Ocado did something that served the interests of U.S. consumers—Ocado entered the U.S. market and offered an innovative Cubic AS/RS to compete with AutoStore’s systems.

4. Ocado’s U.S. market entry with its innovative systems proved successful, and, in May 2018, Ocado and The Kroger Company (“Kroger”)—America’s largest supermarket chain—announced a partnership agreement through which they would install Ocado’s Cubic AS/RS in the United States to better serve U.S. consumers.¹ Throughout 2019 and 2020, Ocado and Kroger made numerous announcements regarding their plans to install Ocado’s Cubic AS/RS in (i) Ohio,² (ii) Central Florida and the Mid-Atlantic region,³ (iii) Georgia,⁴ (iv) Dallas, Texas,⁵

¹ Paul Sandle & Lisa Baertlein, *Kroger Inks Ocado Grocery Delivery Deal to Battle Amazon Threat*, Reuters (May 17, 2018), <https://www.reuters.com/article/us-ocado-group-contract-kroger/kroger-inks-ocado-grocery-delivery-deal-to-battle-amazon-threat-idUSKCN1H0L0> (Ex. 1). Although Ocado agreed to partner with Kroger *exclusively* for grocery order management in the United States, Ocado continues to explore partnership opportunities with non-grocery retailers that can benefit from Ocado’s Cubic AS/RS to serve U.S. consumers.

² The Kroger Company, *Kroger and Ocado Identify Site of America’s First High-Tech Customer Fulfillment Center* (Nov. 19, 2018), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2018/Kroger-and-Ocado-Identify-Site-of-Americas-First-High-Tech-Customer-Fulfillment-Center/default.aspx> (Ex. 2).

³ The Kroger Company, *Kroger and Ocado Name Central Florida City Location of Second High-Tech Customer Fulfillment Center* (Mar. 19, 2019), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Central-Florida-City-Location-of-Second-High-Tech-Customer-Fulfillment-Center/default.aspx> (Ex. 3); The Kroger Company, *Kroger and Ocado Announce Two Additional Sites for High-Tech Customer Fulfillment Centers* (Feb. 2, 2019), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Announce-Two-Additional-Sites-for-High-Tech-Customer-Fulfillment-Centers/default.aspx> (Ex. 4).

⁴ The Kroger Company, *Kroger and Ocado Name Georgia Location of High-Tech Customer Fulfillment Center* (July 11, 2019), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Georgia-Location-of-High-Tech-Customer-Fulfillment-Center/default.aspx> (Ex. 5).

⁵ The Kroger Company, *Kroger and Ocado Name Dallas Location of Fifth High-Tech Customer Fulfillment Center* (Sept. 12, 2019), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Name-Dallas-Location-of-Fifth-High-Tech-Customer-Fulfillment-Center/default.aspx> (Ex. 6).

(v) Wisconsin,⁶ (vi) Maryland,⁷ (vii) the Great Lakes, Pacific Northwest, and Western regions,⁸ (viii) Michigan,⁹ and (ix) Phoenix, Arizona.¹⁰ The goal of the partnership is to provide better and more affordable online grocery shopping to consumers throughout all regions of the United States by enabling both quick delivery to customers and easy pickup by customers.

5. Unhappy with Ocado's early success in the United States—where AutoStore had previously been the only game in town—in October 2020, AutoStore decided to take action to eliminate competition from Ocado. AutoStore advanced sham patent infringement lawsuits

release/2019/Kroger-and-Ocado-Name-Dallas-Location-of-Fifth-High-Tech-Customer-Fulfillment-Center/default.aspx (Ex. 6).

⁶ The Kroger Company, *Kroger and Ocado Bringing 6th High-Tech Customer Fulfillment Center to Pleasant Prairie, Wisconsin* (Nov. 14, 2019), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2019/Kroger-and-Ocado-Bringing-6th-High-Tech-Customer-Fulfillment-Center-to-Pleasant-Prairie-Wisconsin/default.aspx> (Ex. 7).

⁷ The Kroger Company, *Kroger and Ocado to Operate High-Tech Customer Fulfillment Center in Fredrick, Maryland* (Jan. 23, 2020), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-to-Operate-High-Tech-Customer-Fulfillment-Center-in-Frederick-Maryland/default.aspx> (Ex. 8).

⁸ The Kroger Company, *Kroger and Ocado Announce Three Additional Regions for High-Tech Customer Fulfillment Centers* (June 5, 2020), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-Announce-Three-Additional-Regions-for-High-Tech-Customer-Fulfillment-Centers/default.aspx> (Ex. 9).

⁹ The Kroger Company, *Kroger and Ocado Announce Location of High-Tech Customer Fulfillment Center in Romulus, Michigan* (Sept. 28, 2020), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2020/Kroger-and-Ocado-Announce-Location-of-High-Tech-Customer-Fulfillment-Center-in-Romulus-Michigan/default.aspx> (Ex. 10).

¹⁰ The Kroger Company, *Kroger and Ocado Announce Location of High-Tech Customer Fulfillment Center in Phoenix, Arizona* (Jan. 22, 2021), <http://ir.kroger.com/CorporateProfile/press-releases/press-release/2021/Kroger-and-Ocado-Announce-Location-of-High-Tech-Customer-Fulfillment-Center-in-Phoenix-Arizona/default.aspx> (Ex. 11).

against Ocado in the United States District Court for the Eastern District of Virginia (Civil Action No. 2:20-cv-00494) (the “AutoStore Virginia Action”) and before the U.S. International Trade Commission (Investigation No. 337-TA-1228) (the “AutoStore ITC Action”), effectively requesting that Ocado’s entire U.S. business be shut down through, for example, border exclusions and cease and desist orders. Those actions are predominantly based on U.S. patents that AutoStore obtained through fraud on the U.S. PTO over the period from early 2017 to the present.

6. During that time period, AutoStore sought and obtained U.S. patents that purport to claim a generic Cubic AS/RS storage cube and robots that have a *central cavity*—*i.e.*, a cavity within the robot’s body into which storage containers are lifted (a “Central Cavity Robot”). AutoStore first sought a generic Central Cavity Robot patent from the U.S. PTO in June 2017, and then sought further patents with effectively the same claims in November 2017, September 2018, and October 2019. In each case, AutoStore sought and obtained the patent through affirmative misrepresentations and misleading omissions in its filings with the U.S. PTO.

7. Among the many examples of misconduct, in June 2017, AutoStore told the U.S. PTO that it was entitled to claim a generic Central Cavity Robot as its own invention, despite the fact that AutoStore had told a District Court in Oslo, Norway exactly the opposite mere months earlier—with respect to the same patent application family. In October 2016, to avoid Ocado’s meritorious claim that AutoStore misappropriated Ocado’s invention, AutoStore emphatically told the Oslo District Court that AutoStore neither invented nor sought to claim a Central Cavity Robot because “a robot with a central cavity[] was already apparent from prior art.” (Ex. 12 (the “Oslo District Court Pleading”) at 4.) AutoStore insisted that its “patentable invention consisted of *the combination* of the special feature of the cavity and the special feature of wheel placement, and that this *combination* showed an inventive step beyond [] prior art.” (*Id.* at 5 (emphasis added).)

8. In June 2017—soon after the litigation in Oslo District Court had ended and soon after AutoStore was acquired by the private equity firm EQT—AutoStore (i) replaced its U.S.-based patent prosecution counsel for certain of its U.S. patent applications, (ii) hired the Norwegian law firm Onsagers AS to continue prosecution of those U.S. patent applications, and (iii) submitted an application to the U.S. PTO claiming a generic Central Cavity Robot *without a wheel placement combination*—*i.e.*, exactly what AutoStore told the Oslo District Court (mere months earlier) was prior art and *not* an invention that AutoStore sought to or could legally claim.

9. In seeking patent claims directed to a generic Central Cavity Robot, AutoStore never disclosed to the U.S. PTO the Oslo District Court pleadings or the litigation statements that AutoStore made in those pleadings regarding the content of the prior art and the limited scope of AutoStore’s invention, despite having an obligation to make those disclosures under the law and the U.S. PTO’s Manual of Patent Examining Procedure (“MPEP”) (excerpted in Ex. 13), as explained below (*infra* ¶¶ 87–109). The MPEP is a U.S. PTO publication that provides guidance on relevant law, rules, and regulations of prosecution before the U.S. PTO, including the contours of the duty of candor an applicant owes the agency. AutoStore did not abide by those laws, rules, and regulations—and the more general legal duty not to commit fraud—so the U.S. PTO was entirely unaware of AutoStore’s representations to the Oslo District Court when it issued a patent to AutoStore that purports to claim a generic Central Cavity Robot *without a wheel placement combination* (U.S. Patent No. 9,862,579 (the “’579 Patent” or “First Fraud Patent”) (Ex. 14)). The U.S. PTO obviously never would have issued the First Fraud Patent if it had been aware of AutoStore’s litigation statements.

10. AutoStore then proceeded to obtain three substantively identical patents, each of which purports to claim a generic Central Cavity Robot operating on a generic storage grid. Those

patents are U.S. Patent Nos. 10,093,525 (the “’525 Patent” or “Second Fraud Patent”) (Ex. 15), 10,494,239 (the “’239 Patent” or “Third Fraud Patent”) (Ex. 16), and 10,696,478 (the “’478 Patent” or “Fourth Fraud Patent”) (Ex. 17). With respect to the Second and Third Fraud Patents, AutoStore also never disclosed the factual representations that it had made to the Oslo District Court. AutoStore’s patent prosecution counsel cannot feign ignorance of AutoStore’s misconduct. The firm Onsagers represented AutoStore *both* (i) in the Oslo District Court (stating, on behalf of AutoStore, that a Central Cavity Robot was prior art and not AutoStore’s invention), and (ii) before the U.S. PTO (successfully seeking to claim that a generic Central Cavity Robot was AutoStore’s invention).

11. AutoStore’s fraud is compounded by factual assertions, undisclosed to the U.S. PTO, that AutoStore made to the Norwegian Patent Office in January 2014—again, with respect to the *same* patent application family that later was submitted to the U.S. PTO. The following figure from AutoStore’s Norwegian Patent Application—which also appears in AutoStore’s related U.S. patent applications—demonstrates AutoStore’s fraud:

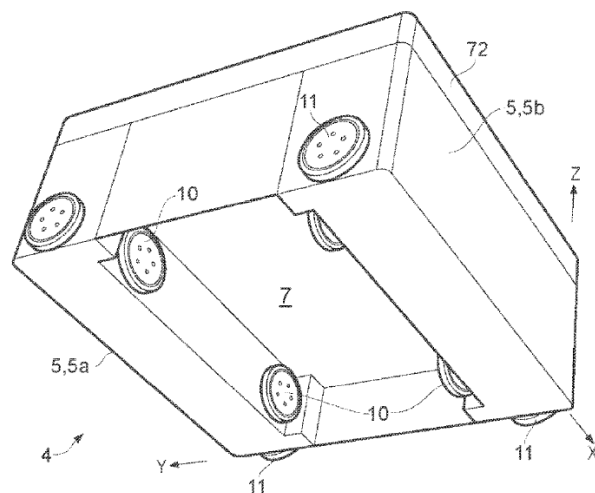


FIG. 3

12. In January 2014, AutoStore told the Norwegian Patent Office—just as it told the Oslo District Court—that the only patentable aspect of its claimed invention was the placement of one set of rolling means (*e.g.*, wheels) fully within the body of the robot, as depicted in the figure above. AutoStore admitted to the Norwegian Patent Office that the combination of two prior art references rendered its invention unpatentable *but for the wheel placement limitation*. AutoStore stated in a submission to the Norwegian Patent Office that it “agreed with the inspector that the combination [of prior art] would have deprived the current invention of sufficient inventive merit if the characterizing part of [the claim] had *only* consisted of the [central cavity]. However, [the claims] also consist[] of the feature ‘*at least one of the sets of vehicle rolling means [] is arranged fully within the vehicle body [].*’ . . . We therefore claim that the current invention has novelty over [prior art] in terms of both the feature” of a central cavity and wheel placement (*i.e.*, at least one set of rolling means arranged fully within the vehicle body). (Ex. 18 at 1 (emphasis in original).)

13. Yet, three years later (starting in June 2017), AutoStore sought and obtained from the U.S. PTO a patent directed to a generic Central Cavity Robot, *without any limitation on where the rolling means are located*. Like the factual assertions that AutoStore made to the Oslo District Court, AutoStore never disclosed its Norwegian Patent Office submission to the U.S. PTO. Here too, AutoStore’s patent prosecution counsel cannot feign ignorance because AutoStore was represented by Onsagers both before the Norwegian Patent Office and the U.S. PTO.

14. Further compounding the fraud, AutoStore also never properly disclosed to the U.S. PTO the main prior art reference at issue before the Norwegian Patent Office, which was a German Central Cavity Robot referred to as DE/241 (Ex. 19). Although AutoStore submitted that reference to the U.S. PTO in June 2015, AutoStore submitted the document in German language, without

providing (i) an English translation of any portion of the document, or (ii) a statement of relevance in English, as required by the U.S. PTO's rules and regulations. The U.S. PTO thus did not have a fair opportunity to evaluate a critical prior art reference, which would have led to rejection of AutoStore's dramatic expansion of its patent claims starting in June 2017.

15. Throughout the entire prosecution history of the relevant patent family before the U.S. PTO, AutoStore *never* disclosed to the U.S. PTO (i) its pleadings to the Oslo District Court, (ii) its submission regarding patentability to the Norwegian Patent Office, or (iii) an English translation of or statement of relevance regarding DE/241. Any of these disclosures alone would have caused the U.S. PTO to reject AutoStore's claim to a generic Central Cavity Robot as non-patentable. Together, the misrepresentations and omissions compel the conclusion that AutoStore defrauded the U.S. PTO when it sought and obtained patent claims that AutoStore candidly admitted to other government entities were (i) prior art, and (ii) not the invention disclosed in AutoStore's own patent application family.

16. AutoStore's fraud is further compounded by the fact that, at present, AutoStore has pending before the U.S. PTO yet another patent application, U.S. Patent App. No. 16/865,443, that (i) is in the same patent application family as the one described above, and (ii) similarly claims a generic Central Cavity Robot. In November 2020, Ocado alleged that AutoStore committed fraud on the U.S. PTO (in a submission in the AutoStore ITC Action), and under U.S. PTO rules and regulations, AutoStore is obliged to disclose those allegations to the U.S. PTO if any applications in the relevant patent application family remain pending. AutoStore has failed to make the required disclosures to the U.S. PTO, which could issue another U.S. Patent to AutoStore entirely unaware that AutoStore sought and obtained substantially similar patents (i) without disclosing material

information to the U.S. PTO, and (ii) by making representations to the U.S. PTO that were flatly inconsistent with representations that AutoStore made to other government entities.

17. In summary, the Fraud Patents that AutoStore sought and obtained from the U.S. PTO between June 2017 and the present never should have been granted and would not have been granted had AutoStore and its patent prosecution counsel been truthful with the U.S. PTO. AutoStore defrauded the U.S. PTO out of necessity to prepare for Ocado's potential entry into the U.S. market. The invention that AutoStore told the Oslo District Court and Norwegian Patent Office it was entitled to claim—*i.e.*, a central cavity *in combination with wheel placement fully within the robot body*—is an invention that Ocado clearly does not practice. Left with no other choice in its efforts to exclude Ocado from the U.S. market, AutoStore decided to seek the Fraud Patents so it could launch sham infringement litigations against Ocado.

18. AutoStore's assertion of the Fraud Patents in the AutoStore Virginia Action and AutoStore ITC Action stands to harm competition most directly by impacting Ocado's current business, business plans, and future prospects, but AutoStore's anticompetitive conduct stands to have a more general and long-lasting negative effect on competition in the United States. AutoStore has gone to great lengths to publicize its sham lawsuits against Ocado¹¹ so other companies that might dare to challenge AutoStore's monopoly know that they would need to overcome artificial barriers to entry (*e.g.*, the cost of multi-front patent litigation based on fraudulently obtained patents) in a market where barriers to entry already are quite high, as explained below (*infra* ¶¶ 47–51).

¹¹ See, *e.g.*, PR Newswire, *AutoStore Sues Ocado for Infringing Technology Patents Central to the Ocado Smart Platform*, Associated Press (Oct. 1, 2020), <https://apnews.com/press-release/pr-newswire/business-technology-technology-issues-western-europe-crime-59c4a0e5bf08cb44b665c711fa7d6759> (Ex. 20).

19. If Defendants' antitrust violations and wrongdoing are not stopped and remedied, both Ocado and U.S. consumers will suffer considerable harm, all to profit AutoStore and its private equity owners. Ocado therefore brings this action (i) pursuant to 15 U.S.C. § 26, to enjoin Defendants' ongoing violations of Section 2 of the Sherman Act, 15 U.S.C. § 2, (ii) pursuant to 15 U.S.C. § 15(a), to recover treble damages for harm to Ocado caused by Defendants' ongoing violations of Section 2 of the Sherman Act, 15 U.S.C. § 2, and (iii) pursuant to Virginia state law, to enjoin and remedy Defendants' tortious interference with Ocado's contractual relationship with Kroger and Ocado's expected economic gain (*i.e.*, compensation for its innovation) under the Ocado-Kroger partnership.

20. In the sections below, Ocado provides further allegations regarding (i) the Cubic AS/RS market and AutoStore's monopoly power (*infra* ¶¶ 32–51), (ii) the historical relationship between Ocado and AutoStore, which is important context for AutoStore's fraud on the U.S. PTO (*infra* ¶¶ 52–60), and (iii) AutoStore's fraud on the U.S. PTO, which led to issuance of U.S. patents that AutoStore has wrongfully asserted against Ocado in the AutoStore Virginia Action and AutoStore ITC Action (*infra* ¶¶ 61–117).

THE PARTIES

21. Ocado is an independent online grocer and innovator, with global headquarters in the United Kingdom and U.S. headquarters in Virginia. The company started in a single rented room in London in 2000, and since its inception has devoted substantial resources to innovating and improving Cubic AS/RS for fulfillment of grocery orders, with the goal of making online grocery shopping more efficient and affordable.

22. Plaintiff Ocado Group plc is an entity organized under the laws of the United Kingdom, with its principal place of business located at Buildings One & Two, Trident Place,

Mosquito Way, Hatfield, Hertfordshire, AL10 9UL, United Kingdom. Ocado Group plc is the ultimate parent of Ocado Solutions USA Inc. and Ocado Solutions Ltd.

23. Plaintiff Ocado Solutions Ltd. is an entity organized under the laws of the United Kingdom, with its principal place of business located at Buildings One & Two, Trident Place, Mosquito Way, Hatfield, Hertfordshire, AL10 9UL, United Kingdom. Ocado Solutions Ltd. is a wholly owned subsidiary of Ocado Group plc, and it is the subsidiary through which Ocado conducts its global business of selling the Ocado Smart Platform (“OSP”) technology to partners (*e.g.*, Ocado Solutions Ltd. is the principal counterparty to the Ocado-Kroger partnership agreements).

24. Plaintiff Ocado Solutions USA Inc. is a corporation organized under the laws of Delaware, with its principal place of business at 1660 International Dr., Ste. 600, McLean, Virginia 22102. Ocado Solutions USA Inc. is a wholly owned subsidiary of Ocado Group plc, and it is the primary entity that conducts U.S.-based activities in furtherance of Ocado Solutions Ltd.’s business with OSP partners.

25. Defendant AutoStore AS is a Norwegian corporation with its headquarters and principal place of business at Stokkastrandvegen 85, 5578 Nedre Vats, Norway. On information and belief, AutoStore AS is the ultimate parent entity of Defendants AutoStore System Inc. and AutoStore Technology AS, and those two wholly owned subsidiaries of AutoStore AS act for the benefit and at the direction of AutoStore AS. Certain of the conduct at issue in this complaint was committed by Jakob Hatteland Logistics AS (“Hatteland”), and, on information and belief, Hatteland became AutoStore AS on or about December 14, 2016.

26. AutoStore AS is one of the named complainants in the AutoStore ITC Action, and AutoStore AS therefore joined in and decided to file that action, which entails the assertion of

fraudulently obtained patents. Additionally, AutoStore AS fraudulently sought and obtained the at-issue patents from the U.S. PTO, acting through its Chief Executive Officer Karl Johan Lier and patent prosecution counsel (Christian Abel of the law firm Onsagers AS). Messrs. Lier and Abel made submissions to the U.S. PTO in Alexandria, Virginia, that are alleged in this complaint to have been affirmatively fraudulent or fraudulent by omission.

27. Defendant AutoStore System Inc. is a corporation organized under the laws of Delaware, with its headquarters and principal place of business at 3 Corporate Park Drive, Unit 1, Derry, New Hampshire 03038. On information and belief, AutoStore System Inc. is a wholly owned subsidiary of AutoStore AS, and it is the primary entity through which AutoStore conducts its business in the United States. AutoStore System Inc. is one of the named complainants in the AutoStore ITC Action, and AutoStore System Inc. therefore joined in and decided to file that action, which entails the assertion of fraudulently obtained patents that were obtained to benefit AutoStore System Inc.'s business in the United States.

28. Defendant AutoStore Technology AS is a Norwegian corporation with its principal place of business at Stokkastrandvegen 85, 5578 Nedre Vats, Norway. On information and belief, AutoStore Technology AS is a wholly owned subsidiary of AutoStore AS. On information and belief, AutoStore Technology AS is the assignee of the fraudulently obtained patents at issue in this complaint, and it is the vehicle through which AutoStore asserts its U.S. patents, including the fraudulently obtained patents at issue in this complaint. AutoStore Technology AS is one of the named complainants in the AutoStore ITC Action, and AutoStore Technology AS is the sole plaintiff in the AutoStore Virginia Action. AutoStore Technology AS therefore joined in and decided to file actions that entail the assertion of fraudulently obtained patents. On information and belief, as a wholly owned subsidiary of AutoStore AS, AutoStore Technology AS asserted the

fraudulently obtained patents against Ocado at the direction of AutoStore AS and for the benefit of AutoStore AS and AutoStore System Inc., which stands to benefit from elimination of Ocado as a U.S. competitor in Cubic AS/RS.

JURISDICTION AND VENUE

29. This Court has subject matter jurisdiction over this antitrust action, brought under Title 15 of the United States Code, pursuant to 28 U.S.C. § 1331. This Court has supplemental jurisdiction over Plaintiffs' state law tort claims pursuant to 28 U.S.C. § 1367.

30. This Court has personal jurisdiction over the Defendants at least because (i) Defendants have asserted or caused assertion of fraudulently obtained patents against Ocado in this District; (ii) Defendants have asserted or caused assertion of fraudulently obtained patents in this District and before the U.S. ITC, knowing that harm would be inflicted in this District, where Ocado's principal place of business in the United States is located; and (iii) Defendants have fraudulently obtained or participated in the decision to fraudulently obtain patents from the U.S. PTO, which is located in this District, and have directed or participated in the direction of fraudulent communications to the U.S. PTO.

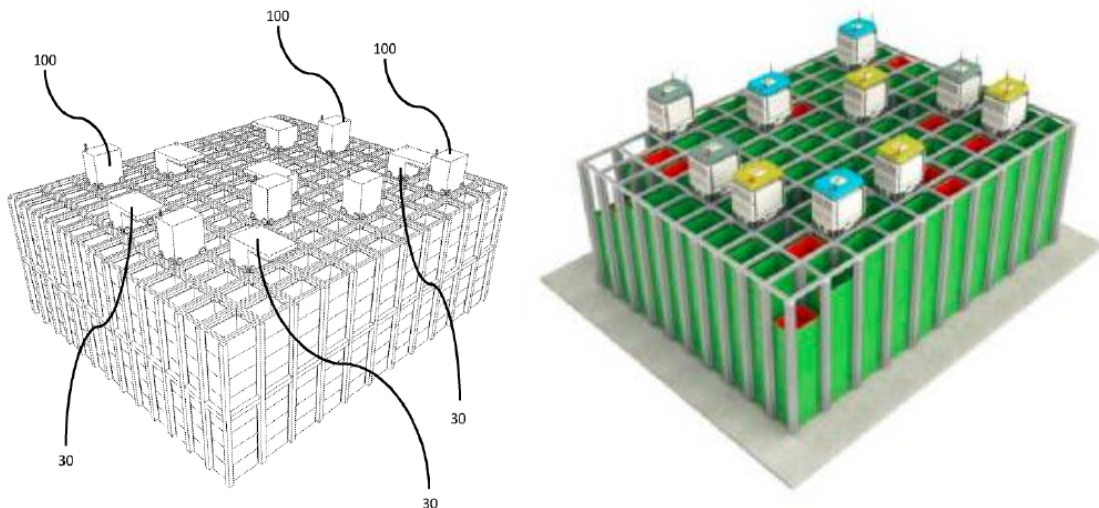
31. Venue is proper in this District pursuant to 28 U.S.C. § 1391(b) because, among other reasons, a substantial part of the events or omissions giving rise to the claims have occurred in this District.

THE CUBIC AS/RS MARKET AND AUTOSTORE'S MONOPOLY POWER

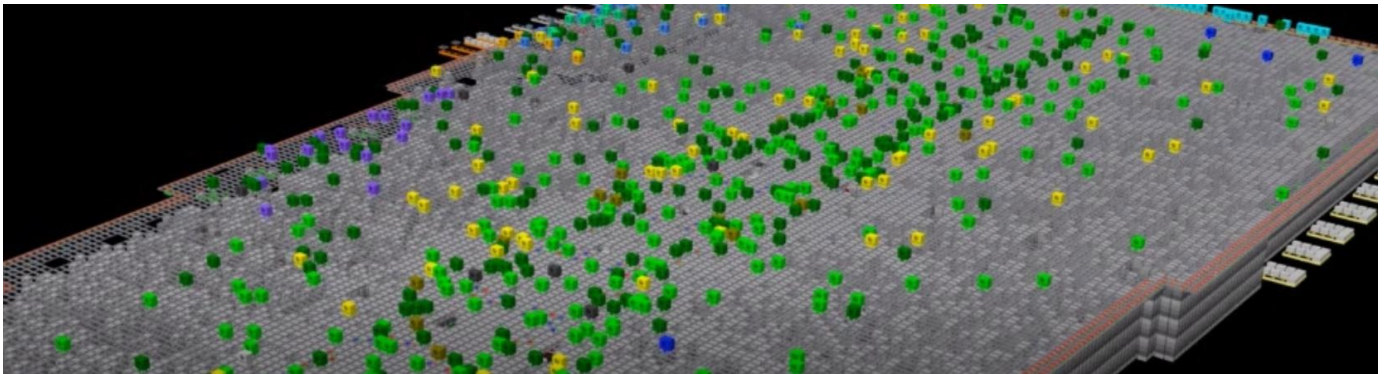
32. Cubic AS/RS is a distinct product market relevant to the claims asserted herein because merchants do not consider other forms of automated order management to be reasonably substitutable. Applying the standard legal test for market definition, a hypothetical monopolist in Cubic AS/RS would find a small, but significant, non-transitory increase in price (*e.g.*, 5%) to be

sustainable because sales would not be diverted to other forms of automated order management. Cubic AS/RS achieves a distinct and high profit margin relative to other forms of automated order management systems, which is strong evidence that Cubic AS/RS is a distinct product market. Additional factual allegations in support of this market definition are provided below.

33. Historically, to fulfill customer orders, retailers' employees would pick items off of shelves in warehouses that contained large amounts of empty space with aisles between the shelves. Cubic AS/RS is an efficient and cost-effective alternative, which leverages the combination of a high-density, modular storage cube with robotics that rapidly lift and transport storage bins to picking stations for assembly of customer orders. The storage cube component of Cubic AS/RS is formed by vertical support beams, the tops of which are connected to create a grid. The grid has two sets of rails—with the first set running perpendicular to the second set—and each rail contains tracks on which storage and retrieval robots move. The following figures contain illustrative examples of the main storage cube, with different kinds of transport robots moving on top:



34. In Cubic AS/RS, storage containers are stored and retrieved by the robots, which move in the X- and Y-directions along the top of the cube. Those robots are equipped with a lifting and gripping device, enabling them to reach down into the vertical columns from which they retrieve or into which they lower the containers. After the robot retrieves a storage container, the container is transported across the grid and delivered to a picking station. The robots are managed by “air traffic control” technology, which communicates with each robot wirelessly and plans optimal routes for the robots to store items, retrieve items, and deliver items to order picking stations. The “air traffic controller” ensures that the robots can perform multiple functions, including (i) accelerate rapidly and move at a high velocity (to fill orders as quickly as possible) without collisions, and (ii) pick order items in the most efficient manner depending, for example, on where the items are located vertically within a storage column. Although the graphics above make Cubic AS/RS appear simple, in reality, the storage cubes are complex and can span the area of several football fields, as shown in the following rendering of a real installation:



35. There are several qualities of Cubic AS/RS that make it a distinct relevant product market. The most salient of those qualities are (i) extremely high storage density, (ii) extremely low cost of inventory storage, (iii) ability to handle high throughput at significantly reduced capital cost relative to other systems (*e.g.*, shuttle systems), (iv) high “uptime” (*i.e.*, there is simplicity to the system, which rarely crashes because there is no critical point of failure given the number of

transport robots on the grid), (v) high accuracy in storage and retrieval of items for inventory or customer orders, (vi) more secure storage of inventory, and (vii) extendability (*i.e.*, the modular nature of the system, which makes it easy to increase throughput rates on an established storage grid or increase capacity by building out the storage grid).

36. Regarding high storage density, no other form of automated order management offers storage anywhere near the density provided by Cubic AS/RS. A traditional warehouse contains significant empty space, which leads to cost inefficiencies in terms of, *e.g.*, rent or capital expenditure for building non-productive space, and high costs associated with providing lighting, heating, cooling, and ventilation for that non-productive space. Cubic AS/RS uniquely “takes the air out of” a warehouse, allowing all storage and retrieval space to be productive, minimizing expenditure on heating, cooling, and ventilation, and in some instances dramatically reducing or eliminating the need for lighting. Other forms of automated storage—*e.g.*, traditional warehouses that largely operate with robotics instead of employees or conveyor belt systems—do not provide these benefits.

37. Indeed, in its marketing materials, AutoStore touts the unique features of Cubic AS/RS that distinguish the system from others, stating that Cubic AS/RS “reduc[es] the storage footprint to a fourth [of] conventional storage. Elimination of traditional needs such as walkways and within height reach shelves means almost all warehouse space gets used for its purpose: warehousing. . . . With the highest density of any goods-to-person system there are many possibilities: get four times the storage capacity out of the current building or move the [distribution center] DC to the city center to save shipment time and cost.”¹²

¹² Bastian Solutions, *Cube Storage Pioneers*, available at <https://www.bastiansolutions.com/assets/1/6/autostore-brochure-bastian-solutions1.pdf> (“AutoStore Guide”) (Ex. 21).

38. Regarding storage cost, merchants fundamentally want to minimize the cost of storing items that are for sale, and—as much as possible—incur costs only when fulfilling a customer order. In Cubic AS/RS, the storage cost is extremely low because each storage location (a spot in the storage grid) is only a container within a relatively inexpensive aluminum grid. Since Cubic AS/RS allows inventory to be stored at high density with little cost, operating expenses are substantially reduced relative to other systems.

39. Regarding speed, AutoStore’s marketing material speaks for itself, touting that (i) its Red Line Cubic AS/RS system serves “customers with throughput requirements of up to 350 bins per hour per port,” and (ii) “the new [Black Line] robot, in combination with the new [Black Line system], can achieve up to 650 bins per hour per port – almost doubling today’s maximum throughput level.”¹³ Although there are other systems that can achieve high throughput (*e.g.*, shuttle systems), they can do so only at (i) a small scale or (ii) with extremely high capital expenses for the system. Cubic AS/RS uniquely offers high throughput with significantly reduced cost, and only AutoStore and Ocado offer that solution to the market.

40. Regarding “uptime,” AutoStore’s marketing materials again distinguish Cubic AS/RS from any other system. AutoStore touts that its Cubic AS/RS achieves an average “uptime” of 99.6%, explaining that it can achieve that metric because its “modular system” has “no-single-point-of-failure” because “[r]obots are continuously self-diagnosing and reporting back to an intelligent notification system that preventively notifies if a unit needs care.” (AutoStore Guide at 23.) In contrast to Cubic AS/RS, other forms of automated order management have points of

¹³ Derek Cribley, *AutoStore Black Line: Your Questions Answered*, Bastian Solutions: The Material Handling Blog (Jan. 15, 2019), <https://www.bastiansolutions.com/blog/autostore-black-line-your-questions-answered> (Ex. 22).

failure that can disrupt operations. For example, a defect in a conveyor belt system can fully halt operations until a repair is implemented.

41. Regarding accuracy and security, AutoStore's marketing materials again demonstrate that Cubic AS/RS constitutes a separate relevant market. AutoStore states: "For a warehouse picker coming from a traditional warehouse background, working an AutoStore Port is much like trying a nail gun after working with a hammer and nails. The grid is unreachable; its security features will decrease the loss of items. Even higher security can be added with 3rd party encryption, fingerprint scanners or similar. With efficient procedures at the port, inventory control normally gets to over 99% as extreme precision." (AutoStore Guide at 31.) These advantages of Cubic AS/RS, unavailable in other forms of automated order management, also make Cubic AS/RS a unique product, especially for high-throughput merchants.

42. Regarding extendability, it is relatively easy to extend the performance of Cubic AS/RS in two respects. *First*, for an existing storage cube, increasing throughput is simply a matter of adding more robots to the cube and/or adding more picking stations for the robots to deliver containers to employees or other robotics for order picking. *Second*, increasing capacity is simply a matter of building out the storage cube to cover more area, which is something that can be done with minimal interruption to ongoing operation of the existing storage cube. Other automated storage systems are not as easy to enhance—in terms of throughput or capacity—and thus Cubic AS/RS offers a unique solution to merchants who expect they will need to increase speed of order fulfillment or their storage capacity.

43. Those qualitative aspects of Cubic AS/RS are sufficient alone to establish a distinct product market. The economic characteristics of the Cubic AS/RS business further demonstrate that Cubic AS/RS is a distinct market. The Cubic AS/RS business, for example, has an annual

growth rate that significantly outpaces the growth rate of automated order management systems generally (particularly over the past few years), and the Cubic AS/RS business achieves a profit margin substantially greater than the profit margin associated with other forms of automated order management.

44. Consistent with the conclusion that Cubic AS/RS is a distinct product market, industry analysts evaluate Cubic AS/RS as a distinct product segment within the broader automated storage and retrieval business. ARC Advisory Group (a leading technology market research firm), for example, identifies Cubic AS/RS as a distinct product market, stating:

Storage Density Optimized with Cube-Based Automated Storage
Cube-based automated storage offers a cost-effective means for automating fulfillment while providing superior storage density. These solutions are synonymous with AutoStore's systems in 2019. However, Ocado is expected to generate revenues from its systems that are structurally similar. Ocado is currently building numerous grocery fulfillment sites with partners in Europe and the US.¹⁴

45. Before Ocado's entry into the Cubic AS/RS market, AutoStore was the only player offering a commercial Cubic AS/RS system anywhere in the world. Today, after Ocado's nascent success as a market entrant, AutoStore continues to be the dominant commercial provider of Cubic AS/RS, with a global market share in excess of 90%. The relevant market should be assessed globally because, as AutoStore and Ocado prove, a company based outside the United States can effectively provide Cubic AS/RS to merchants within the United States, and they can do so with a relatively limited U.S. presence for installation and service of Cubic AS/RS systems.

¹⁴ ARC Advisory Group, *Automated Storage and Retrieval Systems*, <https://www.arcweb.com/market-studies/automated-storage-retrieval-systems> (Ex. 23).

46. AutoStore claims to have more than 500 Cubic AS/RS installations globally¹⁵ relative to Ocado's three active installations (one in the United Kingdom, one in France, and one in Canada) and four installations in commission. AutoStore therefore has a market share well in excess of 90% based at least on total active Cubic AS/RS installations. Moreover, even if Ocado's planned installations with Kroger are taken into account, AutoStore's market share based on total installations still exceeds 90%.

47. The conclusion that AutoStore has monopoly power is confirmed by the fact that the Cubic AS/RS market has high barriers to entry. As a threshold matter, Cubic AS/RS requires a long development timeline and high upfront cost. It took Ocado several years to fully develop its own Cubic AS/RS, and even longer to develop it to a point where Ocado sold the system for use by a third party instead of simply using it for Ocado's own online grocery business. Moreover, AutoStore has actively created barriers to entry, partnering with virtually all of the leading system integrators that market, sell, and install Cubic AS/RS with merchants (customers).¹⁶ Exacerbating the problem, AutoStore's current private equity owner THL also owns at least one of those leading system integrators (Fortna), and THL announced in November 2020 that it intends to further invest in, acquire, and consolidate "automation-focused" businesses in markets vertical and adjacent to Cubic AS/RS.¹⁷ This will further increase barriers to entry. AutoStore's assertion of fraudulently obtained patents, as described herein, raises the barriers to entry still further.

¹⁵ AutoStore, *Cases*, <https://autostoresystem.com/cases/> (Ex. 24).

¹⁶ AutoStore, *Partners*, <https://autostoresystem.com/partners/> (Ex. 25).

¹⁷ Business Wire, *Thomas H. Lee Raises \$900 Million for Automation-Focused Private Equity Fund* (Nov. 16, 2020), <https://www.businesswire.com/news/home/20201116005722/en/Thomas-H.-Lee-Partners-Raises-900-Million-for-Automation-Focused-Private-Equity-Fund> (Ex. 26).

48. For at least the reasons stated above, AutoStore holds monopoly power in the market for Cubic AS/RS, and any anticompetitive acts that AutoStore takes to maintain that monopoly power are unlawful under Section 2 of the Sherman Act as monopolization.

49. Additionally, the sub-market for *high-throughput* Cubic AS/RS is a further distinct market for the purposes of antitrust analysis. The market for high-throughput Cubic AS/RS is defined by the same qualities and entry barriers described above for Cubic AS/RS, but high-throughput Cubic AS/RS uniquely serves the needs of merchants with extremely high order volume. As noted above (*supra* ¶ 39), AutoStore markets the Black Line system to customers with high-throughput demands (*i.e.*, demand to process more than 350 containers per hour per port). Customers who need to manage extremely high throughput would not find other forms of automated order management reasonably substitutable with high-throughput Cubic AS/RS, so the sub-market for high-throughput Cubic AS/RS constitutes a distinct product market. In this distinct sub-market, Ocado is AutoStore's only competitor, and AutoStore therefore has at least a dangerous probability of obtaining monopoly power in that sub-market.

50. Finally, even if other forms of automated storage and retrieval technology incorrectly were included in the same product market as Cubic AS/RS (*e.g.*, shuttle systems), AutoStore still has monopoly power or a dangerous probability of obtaining it. The market for automated storage and retrieval systems is a competitive bid market—*i.e.*, in contrast to off the shelf consumer products (*e.g.*, boxes of cereal purchased without negotiation), competition for the sale of automated storage and retrieval systems, which is a significant investment, occurs via negotiation with the potential merchant-customer. At a minimum, Cubic AS/RS is a highly differentiated product relative to other forms of automated storage and retrieval systems (*supra* ¶¶ 2, 32–44)—and AutoStore and Ocado are the only companies that make that

differentiated product commercially available such that a merchant-customer could play the companies off of each other in a competitive bid process.

51. If AutoStore's anticompetitive enforcement of fraudulently obtained patents were to succeed, AutoStore would lose its head-to-head (and only) competitor for a highly differentiated product, and AutoStore would have the ability to sustainably raise prices to a supracompetitive level. Accordingly, AutoStore at least has a dangerous probability of obtaining monopoly power in automated storage and retrieval systems if its anticompetitive conduct directed at Ocado were to succeed. Any anticompetitive acts that AutoStore takes to obtain or maintain that monopoly power are unlawful under Section 2 of the Sherman Act.

**OCADO DECIDED TO INNOVATE INSTEAD OF
PURCHASING CUBIC AS/RS FROM AUTOSTORE**

52. Ocado commercially launched its online grocery business in 2002, and sought to automate storage and retrieval of order items as much as possible. Ocado evaluated, but ultimately rejected, "off the shelf" automated storage and retrieval systems, including AutoStore's Red Line system, which has not materially improved since 2005. Grocery merchants like Ocado face unique problems that are difficult to solve with routine robotics (*e.g.*, extremely high customer order volume—in terms of both the number of orders and the number of items in a single order—which sometimes requires fulfillment of thousands of orders in a matter of hours, and a need to reliably store, handle, and deliver frozen, refrigerated, and other perishable items). AutoStore's Red Line system had numerous shortcomings that made it unsuitable to solve those problems.

53. The Red Line system utilizes cantilever robots (depicted in the image below), which have a main body that stores driving and lifting mechanisms and electronics, and a cantilevered "arm" to lift storage containers out of the storage cube.



54. Ocado found the Red Line System unsuitable for numerous reasons. *First*, cantilever robots are limited in how they can move on the top of the storage cube because of their shape (the cantilever “arm” obstructs the passage of other robots on adjacent paths). *Second*, the Red Line system’s robots run on tracks that further compromise mobility. In the image above, for example, the Red Line robot is depicted on “single-single” rails, which means the robots cannot pass immediately next to each other in any direction because their wheels would collide on the track. *Third*, Red Line robots are slow and energy inefficient (when compared to Ocado’s robots or AutoStore’s “new” Black Line robots) because of the cantilever design. The wheels that lie between the main body and cantilever “arm” create a fulcrum around which the entire body of the robot may pivot (and fall over). Accordingly, the main body of the robot needs to counteract the tipping effect, which negatively affects the speed and energy efficiency of the robot.

55. Disappointed with off the shelf options, Ocado initially proposed that AutoStore and Ocado work together to re-imagine Cubic AS/RS and implement several of Ocado’s inventions and ideas for improvement. Ocado shared confidential information regarding its inventions and ideas with AutoStore, including the information at issue in 2016 litigation between the parties in Oslo, Norway, as explained in more detail below (*infra* ¶¶ 87–90).

56. AutoStore ultimately declined to work with Ocado, so Ocado decided to work with external engineering firms to help implement Ocado's innovations, which would greatly improve pre-existing Cubic AS/RS and make it suitable for management of grocery orders. One important improvement was to dispense with cantilever robots. Ocado's robots instead occupy a single space on the storage grid and they lift a storage bin up inside a cavity in the robot's body. A video of Ocado's robots in operation is available online,¹⁸ and a still image is provided below:



57. Ocado's single-space robots significantly increase the efficiency of Cubic AS/RS because, among other reasons, busy robots are able to pass immediately next to each other in two directions. Additionally, the wheels of an Ocado robot run on "double-double" rails, which give the robots the ability to pass immediately next to each other on the same rail in both the X-direction and Y-direction. In turn, the robots can be managed by more complex "air traffic control" software, which has a greater probability of identifying an optimal route that actually is available to a robot.

¹⁸ Tech Insider, *Inside a Warehouse Where Thousands of Robots Pack Groceries*, YouTube (May 9, 2018), https://www.youtube.com/watch?v=4DKrcpa8Z_E.

58. To date, Ocado has invested more than \$1 billion to design its Cubic AS/RS (which is part of the overall OSP), and Ocado's innovative system is both (i) used by Ocado's own grocery business, and (ii) offered to other merchants that face high-throughput demands and therefore stand to benefit from Ocado's innovations. Ocado continues to innovate, spending hundreds of millions of dollars on R&D for new technologies to be implemented with OSP (*e.g.*, approximately \$164 million in 2019 alone).¹⁹ The U.S. Patent and Trademark Office has rewarded Ocado's innovations by issuing multiple patents to Ocado that claim inventions related to Ocado's Cubic AS/RS.

59. Over time, and in recognition of the advantages of Ocado's Cubic AS/RS, AutoStore copied Ocado's technology and sought to pass it off as AutoStore's "own technology." In January 2017, AutoStore was acquired by the private equity firm EQT, and then, in July 2019, AutoStore was on-sold to a different private equity firm, THL. Also in 2019, AutoStore launched a "new" system, called Black Line, which utilizes robots that, like Ocado's robots, (i) occupy substantially a single grid space, (ii) run on "double-double" rails on top of the storage cube, and (iii) lift storage containers up vertically into the robot, rather than lifting with a cantilevered arm. The Black Line robots are depicted in the following image:

¹⁹ See also Ocado Group plc 2019 Annual Report at 7 (May 13, 2020) (Ex. 27). This figure was reported in Ocado's annual report in GBP, and has been converted to USD using the Bank of England's reported daily spot rate for December 31, 2019 (£1 = \$1.3210).



60. AutoStore—dissatisfied with unfairly competing with Ocado only by copying Ocado’s patented technology—has now sought to (i) stop Ocado from using Ocado’s own innovations, and (ii) exclude Ocado as a competitor in the U.S. Cubic AS/RS market. To accomplish those goals, between June 2017 and the present, AutoStore fraudulently obtained U.S. patents claiming a generic Central Cavity Robot (which AutoStore has repeatedly admitted—outside of the U.S. PTO—was prior art), and AutoStore has now asserted those fraudulently obtained patents against Ocado in an attempt to have the U.S. ITC halt competition beneficial to U.S. customers at the U.S. border.

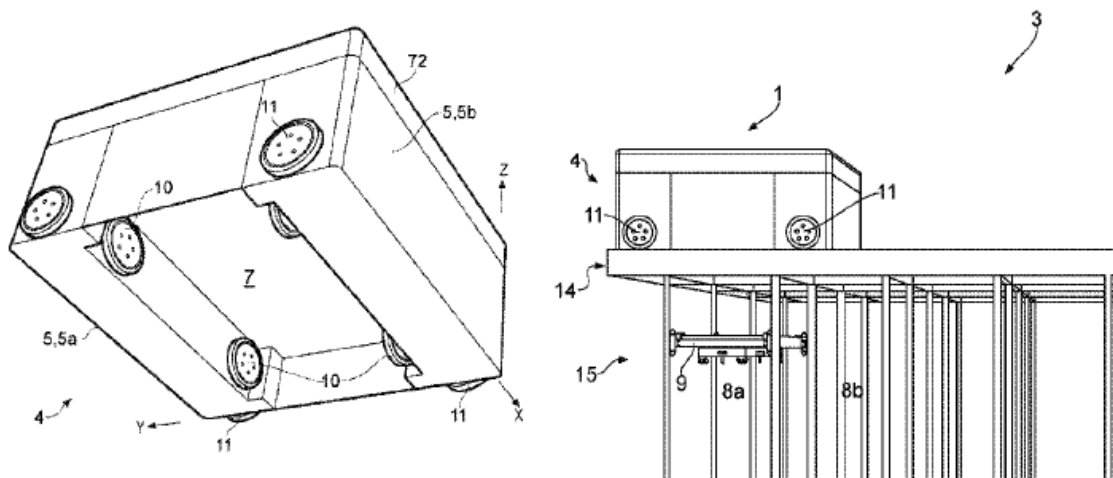
**AUTOSTORE OBTAINED CENTRAL CAVITY ROBOT
PATENTS THROUGH FRAUD ON THE U.S. PTO**

61. To fraudulently obtain generic Central Cavity Robot patents from the U.S. PTO, AutoStore had to go back in time and radically re-imagine history. AutoStore also had to contradict factual representations that it made to foreign government entities (courts and patent offices) when those factual representations suited AutoStore’s other interests.

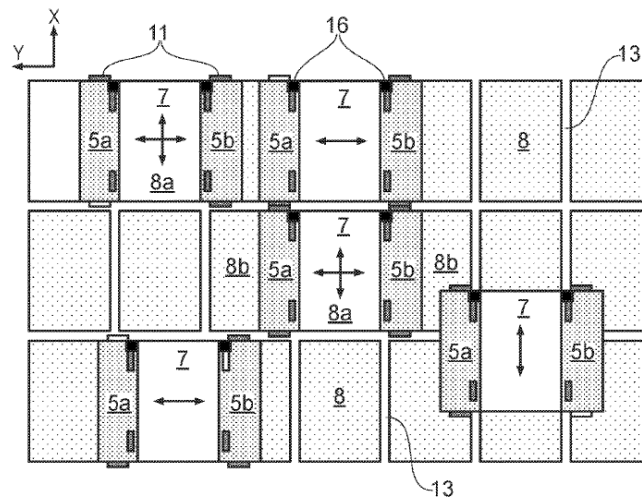
The Norwegian Patent Application – December 2012 to April 2014

62. In a Norwegian patent application that AutoStore filed in December 2012 (App. No. 20121488 (“NO/488”) (Ex. 28)), AutoStore sought to claim a Central Cavity Robot that was “chubby.” The robot was “chubby” because, although it lifted containers into an internal cavity rather than with a cantilevered arm, the robot body still occupied substantially more than one space on top of the storage cube. On information and belief, AutoStore developed this “chubby” robot several years before filing its Norwegian patent application for a commercial offering to the Central Bank of Russia.²⁰

63. The following three figures from NO/488 illustrate the “chubby” robot concept (the last of the three figures is an aerial view of the robots on top of the storage cube, with the shaded flanges (5a and 5b) showing the encroachments on neighboring grid spaces) (Ex. 28):



²⁰ See EVS, *Warehouse Complexes*, <https://evs.ru/sklkom.php> (Ex. 29).



64. The Norwegian Patent Office responded negatively to AutoStore's patent application on June 14, 2013, stating: "We believe that the subject of the application is not patentable." (Exs. 30 (Norwegian) and 31 (English translation) (the "Norwegian Rejection").) The Norwegian Patent Office explained that AutoStore's purported invention was not patentable because of two prior art references: (i) AutoStore's own Norwegian Patent, NO 317366 ("NO/366") (Ex. 32); and (ii) a German Central Cavity Robot, DE 102009017241 ("DE/241") (Ex. 19). The Norwegian Patent Office stated:

The objective technical problem that the subject of the application solves vis-à-vis [NO/366]: How to provide a remote controlled vehicle that allows access to all storage columns located under the vehicle that also enables stable transportation and lifting of heavy storage units.

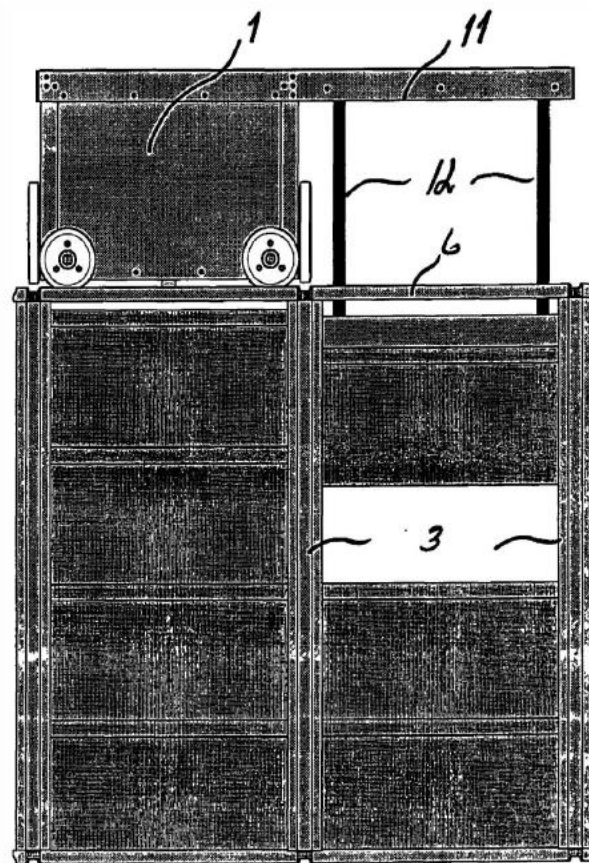
[DE/241] describes a remote controlled motorised vehicle (8) arranged to move on a storage system and receive storage units (9) and transport them in the storage system. The vehicle has a central cavity for receiving storage units and a hoisting device (16). See figs. 1-3; section 0022 in [DE/241].

We believe that it is obvious to a specialist to arrange the solution in [NO/366] with a central cavity for receiving storage units described in [DE/241] in order to arrive at the invention in accordance with the application's independent claim 1 and thus solve the technical problem.

Claim 1 lacks inventive merit and is not patentable. As with claim 1, the invention as provided in claim 11 is not patentable.

We believe that the application's independent claims 2-10 and 12-14 do not describe any patentable new claim vis-à-vis [NO/366] and [DE/241]. (Ex. 31 at 2.)

65. As the Norwegian Patent Office found, NO/366 already disclosed the Cubic AS/RS storage grid and cantilevered robots that operated on it. This is illustrated in Figure 5 of NO/366 (Ex. 32):



66. Also as the Norwegian Patent Office found, DE/241 disclosed the operation of a Central Cavity Robot that operated on a storage grid. This is illustrated in the following two figures from DE/241 (Ex. 19):

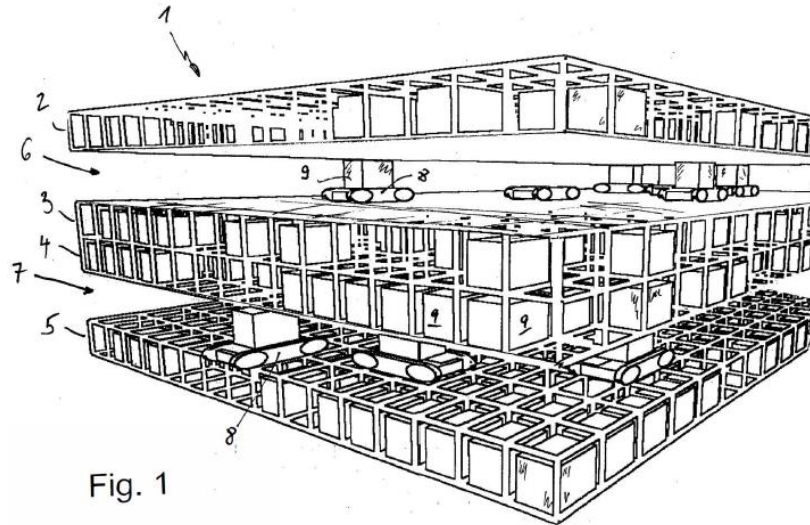


Fig. 1

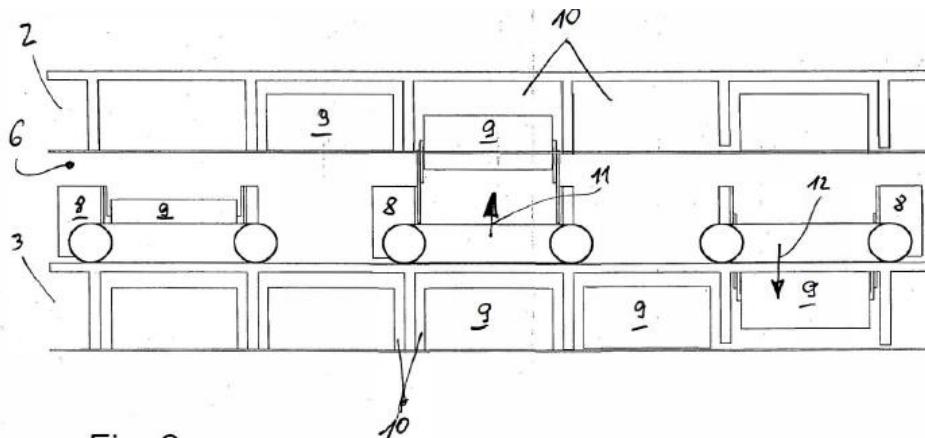


Fig. 2

67. In response to the Norwegian Rejection, on January 22, 2014, AutoStore, and its counsel at Onsagers, did *agree* with the Norwegian Patent Office's conclusion, stating:

Furthermore, the investigat[or] argues that claim 1 and claim 11 lack sufficient inventive merit as the above-mentioned features are found in publication [DE/241]. We agree that [DE/241] shows a vehicle body that can receive storage containers in a cavity in the centre. And we also agree that D2 can be used when assessing inventive merit as it describes the same technical field. Consequently, we would have agreed with the inspector that the combination [NO/366] + [DE/241] would have deprived the current invention of sufficient inventive merit if the characterising part of claim 1 had *only* consisted of the aforementioned features.

However, claim 1 (and claim 11) also consists of the feature "*at least one of the sets of vehicle rolling means (11) is arranged fully within the vehicle body (4)*". We cannot see that this feature is described (explicitly or

implicitly) in [NO/366] or [DE/241]. We therefore claim that the current invention has novelty over [NO/366] and [DE/241] in terms of both the feature

“the second section (7) comprising a centrally arranged cavity (7) within the vehicle body (4), the cavity (7) having at least one bin receiving opening (12) facing towards the storage columns (8,8a,8b) during use,”

and the feature

“at least one of the sets of vehicle rolling means (11) is arranged fully within the vehicle body (4)”.

We remind you that if a specialist could find enough incentive for both features in combination, it should be possible to conclude that there is insufficient inventive merit. We firmly believe that this is not the case. A specialist who wants to optimise the stability of the vehicle will perhaps be inspired to lift the container centrally into the vehicle, but D2 does not give any pointers, neither in the figures nor in the text, for the specific wheel location described in claim 1. In this regard, we refer to the section in the application text on page 4, lines 19-25:

“By arranging at least one set of vehicle rolling means fully within the vehicle or robot body additional stability is obtained during the lifting process since the rolling means is situated closer to the storage bin to be lifted. Of the same reason this arrangement reduces the total load on the lifting device. Furthermore, the arrangement is more space efficient relative to the prior art robot illustrated in figure 2 since the roller means does not give any additional extensions in at least one of the two robot moving directions (X and Y). Production of smaller sized robots is also rendered possible.”

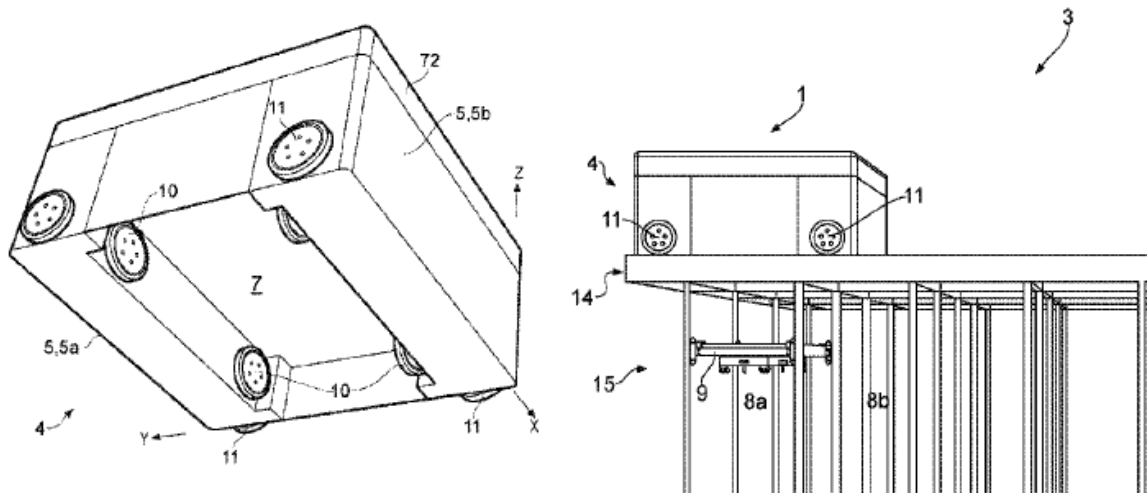
Since the receipt of containers in a centrally located cavity and the placement of wheels near the centre of the carriage, can be considered to be two related features as both afford increased stability, we believe that these must be treated in conjunction when assessing inventive merit. Consequently, either [NO/366] and [DE/241] must also describe the feature *“at least one of the sets of vehicle rolling means (11) is arranged fully within the vehicle body (4)”*, and this is not the case.

(Exs. 33 (Norwegian) and 34 (English translation) (the “Norwegian Response”) (emphasis in original).)

68. On April 24, 2014, the Norwegian Patent Office accepted AutoStore's representation that there was no invention without the combination of a central cavity with "at least one of the sets of vehicle rolling means [] arranged fully within the vehicle body," and allowed the patent on the basis of that representation. (Exs. 35 (Norwegian) and 36 (English translation) (the "Norwegian Reply").) The Norwegian Patent Office, however, found DE/241 to be of particular significance, and instructed AutoStore that a "reference to [DE/241] should be incorporated in the application description," which AutoStore never did. (Ex. 36 at 2.)

The International Patent Application – December 2013 to January 2015

69. In parallel with AutoStore's patent prosecution before the Norwegian Patent Office, in December 2013, AutoStore filed an international Patent Cooperation Treaty application, published as WO 2014/090684 ("WO/684") (Ex. 37). In WO/684, AutoStore again sought to claim its "chubby" robot with rolling means arranged fully within the robot body, and included the same figures as the Norwegian patent application (Ex. 37):



70. WO/684 claimed the following (emphasis in bold):

1. Remotely operated vehicle (1) for picking up storage bins (2) from a storage system (3), comprising

a vehicle body (4) comprising a first section (5,5a,5b) for storing vehicle 5 driving means (6) and a second section (7) for receiving any storage bin (2) stored in a storage column (8,8a,8b) within the storage system (3),

a vehicle lifting device (9) at least indirectly connected to the vehicle body (4) for lifting the storage bin (2) into the second section (7),

a first set of vehicle rolling means (10) connected to the vehicle body (4) allowing movement of the vehicle (1) along a first direction (X) within the storage system (3) during use and

a second set of vehicle rolling means (11) connected to the vehicle body (4) allowing movement of the vehicle (1) along a second direction (Y) in the storage system (3) during use,

the second direction (Y) being perpendicular to the first direction (X),
characterized in that

the second section (7) comprising a centrally arranged cavity (7) within the vehicle body (4), the cavity (7) having at least one bin receiving opening (12) facing towards the storage columns (8,8a,8b) during use, and

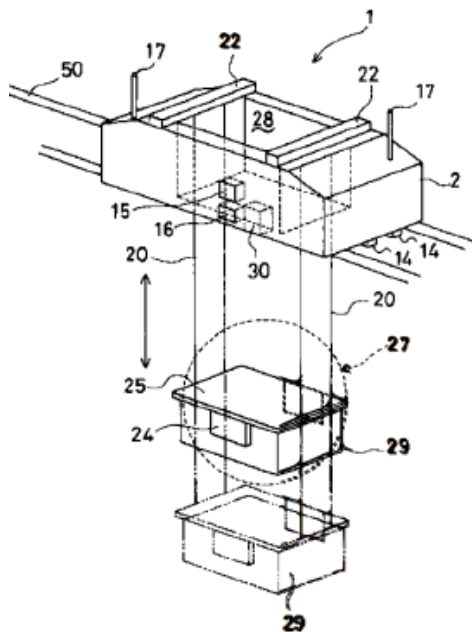
at least one of the sets of vehicle rolling means (11) is arranged fully within the vehicle body (4). (Ex. 37 at 9 (second emphasis added).)

71. The body charged with evaluating AutoStore’s application, the International Searching Authority (“ISA”), reached the same conclusion as the Norwegian Patent Office, and found that AutoStore’s claims were unpatentable, although based on a different set of prior art. (*See* Ex. 38 (the “ISR Opinion”).) The ISA noted, however, that with respect to the characterizing limitation of “at least one of the sets of vehicle rolling means (11) is arranged fully within the vehicle body (4),” the ISA might allow a *narrower* claim, stating: “The feature of having a set of wheel[s] fixed to the inner wall of the cavity (fig. 3 of the present application) seems to be not disclosed in the prior art.” (*Id.*)

72. In response, on October 8, 2014, AutoStore amended the characterizing portion of its claim to require “at least one of the sets of vehicle rolling means (11) is mounted ~~arranged fully~~

~~within~~ inside the cavity (7) vehicle-body (4).” (Ex. 39 (the “ISR Response”) (deletions and additions noted in original).) AutoStore also emphasized its view that its invention was novel over the prior art because “none of the publications give any indications of a wheel configuration having the wheels mounted inside the cavity.” (*Id.*)

73. In reply to the ISR Response, the International Preliminary Examining Authority (the “IPEA”), also charged with evaluating AutoStore’s application, again rejected AutoStore’s claim. (Ex. 40 (the “IPEA Reply”).) The IPEA considered the most important prior art reference to be a Japanese Central Cavity Robot identified as JP H10 203647 (“JP/647”) (Ex. 41), which was the primary basis for the finding of unpatentability. (IPEA Reply.) The following figure from JP/647 illustrates the point (Ex. 41):



74. The IPEA noted, however, that the “feature of having a set of wheel[s] mounted to the inner wall of the cavity (and not only parallel to it) seems not to be disclosed in the prior-art.” (Ex. 40 (emphasis in original).)

75. In response to the IPEA Reply, on January 23, 2015, AutoStore did not dispute the IPEA's characterization of the prior art, and further narrowed its claim to distinguish its application from JP/647 to require "at least one of the sets of vehicle rolling means (11) is mounted onto the inner wall of the cavity (7)." (Ex. 42 (the "IPEA Response") (emphasis in original).) In the International Preliminary Report on Patentability, the IPEA accepted that limiting amendment. (Ex. 43 (the "IPRP").)

Initial Patent Prosecution Before the U.S. PTO – June 2015 through June 2016

76. On June 9, 2015, AutoStore filed its first patent application in the U.S. PTO. The first U.S. application was U.S. App. No. 14/650,757 (the "'757 Application") (Ex. 44), and it claimed priority to NO/488 (filed December 2012) (Ex. 28) and WO/684 (filed December 2013) (Ex. 37). NO/488 and WO/684 were materially the same (*i.e.*, WO/684 did not disclose new subject matter relative to NO/488). The '757 Application could not lawfully claim priority to NO/488 and WO/684 unless the '757 Application did not claim new subject matter beyond the invention disclosed in the earlier applications.

77. When AutoStore submitted the '757 Application to the U.S. PTO, AutoStore also submitted the IPRP and the Norwegian Rejection, which on information and belief, was submitted only in Norwegian language without an English-language translation or separate English-language statement of relevance. On information and belief, AutoStore has never properly disclosed the Norwegian Rejection to the U.S. PTO. (*See* Ex. 45 ("'757 Information Disclosure Statement").) AutoStore also submitted several prior art references with several critical omissions.

78. First, AutoStore submitted DE/241 (the prior art reference that the Norwegian Patent Office deemed critical to the patentability analysis) and JP/647 (the prior art reference that the ISA and IPEA had deemed most important to the patentability analysis). However, AutoStore

submitted those references only in their native language, without English translations, and with respect to at least DE/241, AutoStore also failed to submit an English-language statement of relevance, as required by U.S. PTO rules, regulations, and standards. Obviously, in light of AutoStore's statements in the Norwegian Response regarding DE/241, a statement of relevance regarding DE/241 was highly material to the patentability analysis. Based on publicly available records, AutoStore has never fairly disclosed DE/241 to the U.S. PTO.

79. Second, on June 4, 2015, AutoStore submitted a Third Party Observation to the World Intellectual Property Organization ("WIPO") (the "AutoStore TPO") (Ex. 46). In the AutoStore TPO, AutoStore made several arguments *against* one of Ocado's international patent applications directed to a Cubic AS/RS robot. AutoStore: (i) made numerous factual representations about the scope of the prior art; (ii) submitted several prior art references to WIPO; and (iii) submitted an "English translation of [NO/366]" to WIPO. However, when AutoStore submitted the '757 Application to the U.S. PTO only five days later (June 9, 2015), AutoStore failed to disclose much of the information to the U.S. PTO in seeking its own patent claims.

80. First, AutoStore submitted a copy of NO/366 (the second prior art reference that the Norwegian Patent Office had found critical to the patentability analysis) to the U.S. PTO, but submitted it only in Norwegian language. AutoStore possessed an English translation of that critical prior art reference—disclosed to WIPO only days earlier in connection with the AutoStore TPO—but AutoStore withheld that critical document from the U.S. PTO, despite rules and regulations that require submission of an English translation if it is in the "possession, custody, or control of, or is readily available to" the applicant. (*See* 37 C.F.R. 1.98.) Given the importance of NO/366 to the patentability analysis, AutoStore's decision to withhold the English translation of

NO/366 was an omission material to the U.S. PTO consideration of AutoStore's U.S. patent applications.

81. Second, AutoStore chose not to disclose to the U.S. PTO several prior art references that it had disclosed to WIPO in connection with the AutoStore TPO—DE 199 35 742, US20140086714, EP0034154, and DE202009014456. (Ex. 46 at 15.) AutoStore cannot plausibly deny that it was unaware of those prior art references (submitted to WIPO only days before the '757 Application was submitted to the U.S. PTO). Nor can AutoStore deny that those references were material to the U.S. PTO's evaluation of the '757 Application—indeed, in the AutoStore TPO, AutoStore identified the international counterpart to the '757 Application as pertaining to the same field and subject matter as the four prior art references that it chose to reveal to WIPO (when it served AutoStore's interests in opposing one of Ocado's patents), but chose *not* to reveal to the U.S. PTO when it served AutoStore's interests in obtaining its own patent.

82. Third, AutoStore did not disclose the AutoStore TPO itself to the U.S. PTO, despite the fact that the AutoStore TPO contained a number of (i) important English-language descriptions of foreign prior art references and (ii) factual representations from AutoStore regarding the content of prior art. AutoStore argued strenuously, for example, that a Central Cavity Robot already was disclosed in prior art that pre-dated AutoStore's earliest relevant patent application (*i.e.*, NO/488 that was filed with the Norwegian Patent Office in December 2012). For example, with respect to a prior art reference that pre-dated NO/488 by more than a decade, AutoStore stated that the reference already presented a Central Cavity Robot (*i.e.*, "already presents a solution having a centrally arranged container-receiving space"). (Ex. 46 at 14.)

83. Overall, in connection with the '757 Application, AutoStore never submitted or otherwise properly disclosed the contents of (i) the Norwegian Response, (ii) the Norwegian

Reply, (iii) the ISR Opinion, (iv) the ISR Response, (v) the IPEA Reply, (vi) the AutoStore TPO, (vii) certain prior art disclosed in the AutoStore TPO, or (viii) English translations of (or appropriate English descriptions of) NO/366 and DE/241. All of those omissions were material to patentability in light of the statements made by AutoStore and by foreign and international patent examination authorities regarding prior art and the limitations on the scope of the invention that AutoStore could legally claim—*i.e.*, the critical importance of having rolling means arranged fully within the robot body or, more narrowly, having wheels mounted to the inner wall of the robot's cavity. As explained below, as AutoStore continued to prosecute the '757 Application and its family members before the U.S. PTO (from June 2015 to the present), AutoStore has never properly disclosed to the U.S. PTO the materials identified in this paragraph.

84. At least in connection with the '757 Application itself, however, AutoStore's omissions—although material to patentability—appear not to have been accompanied by affirmative misrepresentations. AutoStore's patent prosecution counsel at the time—Osha Bergman Watanabe & Burton (f/k/a Osha Liang LLP) of Texas (“Osha Liang”)—submitted patent claims to the U.S. PTO that were consistent with the limitations AutoStore had admitted were necessary to the Norwegian Patent Office and IPEA. Contemporaneous with the filing of the '757 Application, Osha Liang filed a preliminary amendment that included the following claim limitation: “wherein at least one of the sets of vehicle rolling means ~~(11) is arranged fully within the vehicle body (4)~~ mounted onto the inner wall of the cavity.” (Ex. 47 (deletions and additions noted in original).) In other words, Osha Liang's submission to the U.S. PTO claimed an invention that was, in the respects noted above, consistent with AutoStore's representations to other patent examination authorities, requiring the *combination* of a central cavity and *specific wheel placement*.

85. On August 23, 2016, the '757 Application issued as U.S. Patent No. 9,422,108 (the "'108 Patent") (Ex. 48), and the relevant claims included the wheel placement limitation that admittedly was necessary to patentability. Ocado plainly does not practice the invention consisting of the combination of the central cavity and wheels mounted to the inner wall of the cavity—*i.e.*, the requirement critical to patentability—and AutoStore has not asserted that Ocado infringes the '108 Patent.

86. Shortly before the issuance of the '108 Patent, on June 29, 2016, Osha Liang (on behalf of AutoStore) filed a new application (U.S. App. No. 15/197,391 (the "'391 Application")) as a continuation of the '757 Application. (Ex. 49.) By law, a continuation application cannot add new subject matter, and the applicant is limited to providing alternative claims to the invention disclosed in the original application. Like the '108 Patent, the '391 Application was not directed to a Central Cavity Robot. Instead, the '391 Application was directed to a bin lift elevator that is part of the Cubic AS/RS storage cube. That technology is not at issue in the AutoStore Virginia Action or AutoStore ITC Action because Ocado plainly does not practice it, and that technology is not relevant to the allegations in this complaint.

Oslo, Norway District Court Litigation – June 2016 through February 2017

87. In June 2016, Ocado initiated litigation against AutoStore in Oslo District Court, claiming that AutoStore's Norwegian NO/488 patent application (Ex. 28) and its counterparts, as described above, were derived from a patent application that Ocado had confidentially disclosed to AutoStore in 2012 as part of business discussions between the companies.

88. AutoStore denied Ocado's claim that AutoStore was seeking to patent Ocado's invention, and to defend itself, AutoStore made numerous emphatic factual representations about (i) what was in the prior art and (ii) the scope of the invention disclosed and claimed in AutoStore's

NO/488 and its counterparts and family members (which includes the '108 Patent that the U.S. PTO issued to AutoStore in August 2016). Specifically, in an October 3, 2016 pleading, AutoStore made the following factual representations to the Oslo District Court (Ex. 12):

- “[A] robot with a central cavity, was already apparent from prior art.” (p. 2)
- “As can be seen from claim 1 of [AutoStore’s] patent priority application, the core of the invention is the combination of a central cavity and wheel placement.” (p. 3)
- “[AutoStore’s] invention, as stated in [its] priority patent application, consists of the *combination* of cavity and wheel placement. That a robot with a central intake of boxes (for example by using a cavity or a continuous channel) was already known prior art, was apparent from the Norwegian Patent Office’s novelty investigation where [the prior art DE/241] was found: [] which was submitted on 9 April 2009, long before Ocado’s patent application, cf. immediately below. Within the same technical field, [DE/241] shows a trolley with a central intake for receiving storage units. The Norwegian Patent Office then believed that the subject matter of the application was not patentable [] until [AutoStore] pointed out that the patentable invention consisted of the combination of cavity and wheel placement.” (p. 4)
- “The cavity was prior art – combination with wheel location was inventive” (p. 4)
- “[A] robot with a central cavity, was already apparent from prior art” (p. 4)
- “Although the feature of a central cavity is not found in Ocado’s patent application, it was not possible to steal that feature from that application since it was already part of the prior art.

The above is evident from a letter from the Norwegian Patent Office on 14 June 2013, in which a statement of fact was given to [AutoStore’s] patent application. Here, the Norwegian Patent Office came to the conclusion that the subject matter of the application was not patentable, e.g. because [DE/241] described a trolley with a central cavity for receiving storage units.” (pp. 4–5)

- “On behalf of [AutoStore], Onsagers pointed out in a letter dated 22 January 2014 that the patentable invention consisted of the combination of the special feature of the cavity and the special feature of wheel placement, and that this combination showed [an] inventive step beyond [the] prior art. The

Norwegian Patent Office agreed with this and then concluded that the invention was patentable.” (p. 5)

- “Furthermore, it can be stated that the patent was granted due to the cavity’s combination with the wheel placement – and where this wheel placement is not stated in Ocado’s patent application, much less the combination with the cavity. This also confirms that the invention does not in any way originate from Ocado’s patent application.” (p. 5)
- “It is clear that the core of the invention was made by Hatteland already in the *summer of 2010*. This is shown by an e-mail from Ingvar Hognaland to Sven Åge Hjorteland, both employed of Hatteland, who in text and three attached drawings describe the robot with the current combination between cavity and wheel placement.” (p. 5)

89. In further support of its assertions, AutoStore submitted alleged 2010 documents that purportedly illustrated AutoStore’s invention, as disclosed and claimed in NO/488. Those documents showed a “chubby” robot that was nearly identical to the figure disclosed in NO/488 and its related applications (which includes all of the U.S. patent applications at issue in this complaint) (Ex. 28):

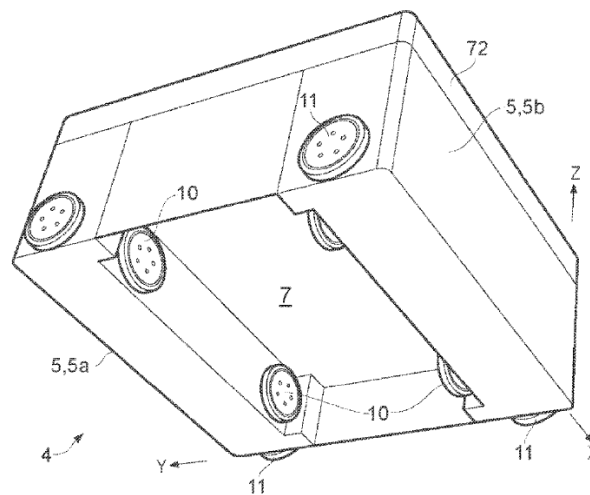


FIG. 3

90. In February 2017, the Oslo District Court issued a decision (Ex. 50) that ended the litigation between AutoStore and Ocado, largely because the Oslo District Court found there was no basis to question the date of AutoStore’s “chubby” robot 2010 design documents, which

allegedly pre-dated the relevant business meeting between Ocado and AutoStore. Since AutoStore claimed that the “chubby” robot was the extent of its invention, the Oslo District Court did not find any reason to question that AutoStore’s invention pre-dated the meeting between the parties. Immediately before that decision was released, in January 2017, AutoStore was acquired by the private equity firm EQT.

91. Soon after the court decision was released, and at least by June 2017, AutoStore replaced its U.S. patent prosecution counsel for prosecution of new “chubby” robot patents in the United States. Osha Liang was replaced with Onsagers, the Norwegian law firm that co-represented AutoStore in the Oslo District Court Litigation and that represented AutoStore in prosecution of NO/488 before the Norwegian Patent Office and WO/684 (NO/488’s international counterpart) before international patent examination authorities. Specifically, Christian Abel, a partner at Onsagers, took over AutoStore’s U.S. patent prosecution activities for the “chubby” robot patents. Mr. Abel purports to be “the only attorney practicing in Norway with a license to handle matters before the US Patent and Trademark Office,” and purports to specialize in patent drafting and prosecution in “the Chemicals, Oil and Gas and Marine Biology/Fisheries sectors.”²¹

92. Osha Liang’s apparent last act as AutoStore’s U.S. patent prosecution counsel for the “chubby” robot patents was to file U.S. Patent Application No. 15/411,301 on January 20, 2017. (Ex. 52 (the “’301 Application”).) Osha Liang shepherded that application through prosecution, and, on January 2, 2018, it issued as U.S. Patent No. 9,856,082 (the “’082 Patent”) (Ex. 53). Like the earlier U.S. patents that Osha Liang prosecuted on AutoStore’s behalf, the ’082 Patent’s claims are broadly consistent with the representations that AutoStore had made

²¹ Onsagers AS, *Profile of Christian Abel*, <https://onsagers.com/ansatte/christian-abel/> (Ex. 51).

to other patent examining authorities and the Oslo District Court. The '082 Patent requires “at least one of the sets of vehicle rolling means being arranged fully within the vehicle body.” (*Id.*)

93. None of the “chubby” robot patents that were prosecuted by Osha Liang (the '108, '802, or '082 Patents) have been asserted against Ocado because Ocado plainly does not practice what AutoStore repeatedly and emphatically said it invented—the combination of a central cavity with wheel placement fully arranged within the robot body (or mounted to the internal wall of the robot’s cavity). Finding that its existing patent claims could not be asserted against Ocado’s single-space robots, AutoStore decided to revise history and seek patent claims totally at odds with its prior representations to foreign courts and patent offices.

Fraudulent Patent Prosecution Before the U.S. PTO – June 2017 Through the Present

94. Starting in June 2017, Mr. Abel of Onsagers began prosecuting patents for AutoStore before the U.S. PTO, and, on June 26, 2017, Mr. Abel submitted to the U.S. PTO AutoStore’s first affirmatively fraudulent patent application (as relevant to this complaint), which successfully sought a patent directed to a generic Central Cavity Robot without any limitation on the placement of the wheels.

95. On June 26, 2017, Mr. Abel (on behalf of AutoStore) submitted to the U.S. PTO U.S. App. No. 15/632,441 (Ex. 54 (the “’441 Application”)), which was a continuation of the '301 Application (filed by Osha Liang on January 20, 2017) and also of the '757 Application (filed by Osha Liang on June 9, 2015). The entire patent application family—the '757, '301, and '441 Applications—were all part of the same patent family claiming priority to AutoStore’s December 2012 Norwegian patent application, NO/488. As a matter of law, to claim priority to NO/488, the claims in the new application cannot claim subject matter beyond the invention disclosed in NO/488 or its international counterpart.

96. The '441 Application was a dramatic departure from its earlier family members. The '757 Application included the limitation that the Central Cavity Robot had “at least one [] set of vehicle rolling means [] mounted onto the inner wall of the cavity,” and the '301 Application included the limitation that the Central Cavity Robot had “at least one of the sets of vehicle rolling means [] arranged fully within the vehicle body.” Those claims were broadly consistent with AutoStore’s representations to the Norwegian Patent Office, Oslo District Court, and IPEA that a Central Cavity Robot was prior art, but AutoStore’s invention required the *combination* of a central cavity and *specific wheel placement within the robot body*. In the '441 Application that Mr. Abel filed on June 26, 2017, however, the wheel placement limitation *suddenly disappeared*.

97. Instead, the '441 Application claimed elements of a generic storage grid and “[a] plurality of remotely controlled robot vehicles movable along the support rails, said robot vehicles comprising (i) A vehicle body, (ii) A plurality of rolling members attached to the vehicle body, arranged for traveling along the rolling tracks in the first and second directions, (iii) A cavity arranged centrally within the vehicle body arranged to receive a storage bin from a storage column, (iv) A lifting device arranged to lift a storage bin into the cavity, whereby the robot vehicle can move along the top of the storage structure to positions immediately above a storage column and lift bins into the centrally-arranged cavity for further transport along the top of the storage structure.” (*Id.* at 4.) By ignoring its prior concessions about what was inventive and what was not, AutoStore requested that the U.S. PTO grant it a patent claiming nothing more than a prior art Central Cavity Robot—*i.e.*, exactly what AutoStore told the Oslo District Court mere months earlier was something that AutoStore neither sought to claim nor could claim as its own invention.

98. On January 9, 2018, the '441 Application issued as U.S. Patent No. 9,862,579 (*i.e.*, the First Fraud Patent) (Ex. 14). AutoStore then proceeded to file three more patent

applications with substantially the same claims directed to a Central Cavity Robot without any wheel placement limitation. On November 21, 2017, AutoStore filed U.S. App. No. 15/818,791 (the “791 Application”), which issued on October 9, 2018 as U.S. Patent No. 10,093,525 (*i.e.*, the Second Fraud Patent). (Exs. 55 and 15, respectively.) On September 6, 2018, AutoStore filed U.S. App. No. 16/122,969 (the “969 Application”), which issued on December 3, 2019 as U.S. Patent No. 10,494,239 (*i.e.*, the Third Fraud Patent). (Exs. 56 and 16, respectively.) On October 1, 2019, AutoStore filed U.S. App. No. 16/589,158 (the “158 Application”), which issued on June 30, 2020 as U.S. Patent No. 10,969,478 (*i.e.*, the Fourth Fraud Patent). (Exs. 57 and 17, respectively.)

99. Each of the First through Fourth Fraud Patents is directed to a generic Central Cavity Robot, and the different claims in each patent amount to wordsmithing. In the First Fraud Patent, AutoStore claimed a generic Cubic AS/RS that included a Central Cavity Robot. In the Second Fraud Patent, AutoStore merely rearranged the claim elements and claimed a Central Cavity Robot that operated on a generic Cubic AS/RS.²² In the Third Fraud Patent, AutoStore again rearranged claim elements and claimed both a generic Cubic AS/RS with a Central Cavity Robot and a Central Cavity Robot that operated on a generic Cubic AS/RS. Finally, in the Fourth Fraud Patent, AutoStore included claims directed to the *method* of operating a Central Cavity Robot on a generic Cubic AS/RS in addition to claims directed to a generic Cubic AS/RS and Central Cavity Robot, as in the earlier patents. As a substantive matter, each Fraud Patent amounts

²² The U.S. PTO found that the First and Second Fraud Patents did not even contain minor differences such that the Second Fraud Patent was not patentably distinct from the First Fraud Patent. (Ex. 58.)

to a reorganization of words, claiming the subject matter that AutoStore admitted was prior art—*i.e.*, a Central Cavity Robot.

100. In connection with prosecution of the First through Fourth Fraud Patents, AutoStore did not disclose to the U.S. PTO multiple material documents, including (i) the Norwegian Rejection, (ii) the Norwegian Response, (iii) the Norwegian Reply, (iv) the ISR Opinion, (v) the ISR Response, (vi) the IPEA Reply, (vii) DE/241 prior art (the German Central Cavity Robot that was critical to patentability before the Norwegian Patent Office), or (viii) IPRP. In connection with prosecution of the First through Third Fraud Patents, AutoStore also did not disclose JP/647, the Japanese Central Cavity Robot that was critical to patentability during international review. Perhaps realizing that its scheme was going too far, AutoStore disclosed JP/647 in connection with the Fourth Fraud Patent, but submitted it only in the Japanese language without any statement of relevance and without the ISR Opinion, ISR Response, IPEA Reply, or IPRP, which would have reminded the patent examiner of the significance of JP/647 now that several years had passed since U.S. Patent Prosecution had started (*i.e.*, June 2015).

101. Additionally, in connection with prosecution of the First through Fourth Fraud Patents, AutoStore never disclosed the AutoStore TPO, several of the prior art references disclosed in the AutoStore TPO, or an English translation of NO/366. (*See supra* ¶ 80.) Whatever might be said about the materiality of those documents to the '757 Application, all of those documents obviously are material to the First through Fourth Fraud Patents, all of which purport to claim a Central Cavity Robot. Those documents—which contain AutoStore's own critical admissions about the prior art—would have made it impossible for AutoStore to obtain the First through Fourth Fraud Patents from the U.S. PTO.

102. Perhaps most significantly, AutoStore did not disclose the Oslo District Court Pleading in which AutoStore stated (only months earlier) that it did not invent and was not entitled to claim exactly what it claimed before the U.S. PTO. The Manual of Patent Examining Procedure specifically provides that AutoStore do precisely what it did not do:

Where the subject matter for which a patent is being sought is or has been involved in litigation and/or a trial proceeding, or the litigation and/or trial proceeding yields information material to currently pending applications, ***the existence of such litigation and any other material information arising therefrom must be brought to the attention of the examiner or other appropriate official at the U.S. Patent and Trademark Office.*** In particular, material information that is raised in trial proceedings that is relevant to related applications undergoing examination should be submitted on an Information Disclosure Statement for the examiner's consideration. Examples of such material information include evidence of possible prior public use or sales, questions of inventorship, prior art, allegations of "fraud," "inequitable conduct," and "violation of duty of disclosure." ***Another example of such material information is any assertion that is made during litigation and/or trial proceeding which is contradictory to assertions made to the examiner.*** *Environ Prods., Inc. v. Total Containment, Inc.*, 43 USPQ2d 1288, 1291 (E.D. Pa. 1997). Such information might arise during litigation and/or trial proceeding in, for example, pleadings, admissions, discovery including interrogatories, depositions, and other documents and testimony. MPEP § 2001.06(c) (Ex. 13 at 2000–07) (emphasis added).

103. The MPEP also defines material information broadly as including:

In addition to prior art such as patents and publications, [material information to be disclosed] includes, for example, information on enablement, possible prior public uses, sales, offers to sell, derived knowledge, prior invention by another, inventorship conflicts, ***litigation statements***, and the like. "Materiality is not limited to prior art but embraces *any* information that a reasonable examiner would be substantially likely to consider important in deciding whether to allow an application to issue as a patent." *Bristol-Myers Squibb Co. v. Rhone-Poulenc Rorer, Inc.*, 326 F.3d 1226, 1234, 66 USPQ2d 1481, 1486 (Fed. Cir. 2003). MPEP § 2001.04 (Ex. 13 at 2000–04) (emphasis added).

104. The information that AutoStore intentionally withheld from the U.S. PTO unquestionably was material to patentability, including because the MPEP expressly defines the

information that AutoStore withheld as material (*i.e.*, litigation statements made by the applicant concerning the subject matter of the application). For example, in the case of the Oslo District Court Pleadings, materiality of the withheld information is self-evident because the U.S. PTO obviously would not have granted patent claims that AutoStore admitted were prior art and not AutoStore's invention. Indeed, AutoStore could not plausibly have made an application in the first place without hiding the facts it emphatically represented to the Oslo District Court.

105. Apart from AutoStore's fraudulent omissions, AutoStore also *affirmatively* misled the U.S. PTO by claiming *four times*, between June 2017 and October 2019, that it was entitled to the very invention that AutoStore admitted it was not allowed to claim, including in the first relevant application submitted to the U.S. PTO in June 2015. When Osha Liang filed the '757 Application in June 2015, AutoStore immediately filed a preliminary claim amendment, which limited the patent claims to a Central Cavity Robot with "at least one of the sets of vehicle rolling means[] mounted onto the inner wall of the cavity." (Ex. 47 at 3.) AutoStore also submitted the IPRP, which explained why the preliminary amendment was being made—*i.e.*, AutoStore's claimed invention was unpatentable without that wheel placement limitation. It was deceitful for AutoStore to rely on the two-year passage of time—and the fading of a patent examiner's memory—to play a game of Three-card Monte with the U.S. PTO and claim exactly what AutoStore told the U.S. PTO it was not entitled to claim at the beginning of prosecution.

106. Indeed, the MPEP quotes as guidance a decision from the Seventh Circuit Court of Appeals that supports this very proposition:

As set forth by the court in *Armour & Co. v. Swift & Co.*, 466 F.2d 767, 779, 175 USPQ 70, 79 (7th Cir. 1972):

[W]e think that it is unfair to the busy examiner, no matter how diligent and well informed he may be, to assume that he retains details of every pending file in his mind when he is reviewing a particular application . . . [T]he

applicant has the burden of presenting the examiner with a complete and accurate record to support the allowance of letters patent. MPEP § 2001.06(b) (Ex. 13 at 2000–6).

107. The MPEP also broadly prescribes:

The language of 37 CFR 1.56 (and 37 CFR 1.555) emphasizes that there is a duty of candor and good faith which is broader than the duty to disclose material information. ***37 CFR 1.56 further states that “no patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct.”***

The Office strives to issue valid patents. The Office has both an obligation not to unjustly issue patents and an obligation not to unjustly deny patents. Innovation and technological advancement are best served when an inventor is issued a patent with the scope of protection that is deserved. The rules serve to remind individuals associated with the preparation and prosecution of patent applications of their duty of candor and good faith in their dealings with the Office, and will aid the Office in receiving, in a timely manner, the information it needs to carry out effective and efficient examination of patent applications. Moreover, an incentive exists to submit material information to the Office because it may result in enhanced patent quality and may avoid later questions of materiality and intent to deceive. MPEP § 2001.04 (Ex. 13 at 2000–4) (emphasis added).

108. In turn, 37 C.F.R. § 1.56 is the law that prescribes the duty of candor to the patent office in its broadest terms (emphasis added):

A patent by its very nature is affected with a public interest. The public interest is best served, and the most effective patent examination occurs when, at the time an application is being examined, the Office is aware of and evaluates the teachings of all information material to patentability. Each individual associated with the filing and prosecution of a patent application has a duty of candor and good faith in dealing with the Office, which includes a duty to disclose to the Office all information known to that individual to be material to patentability as defined in this section. . . .

[N]o patent will be granted on an application in connection with which fraud on the Office was practiced or attempted or the duty of disclosure was violated through bad faith or intentional misconduct. . . .

Under this section, information is material to patentability when it is not cumulative to information already of record or being made of record in the application, and

(1) It establishes, by itself or in combination with other information, a prima facie case of unpatentability of a claim; or

(2) It refutes, or is inconsistent with, a position the applicant takes in: (i) Opposing an argument of unpatentability relied on by the Office, or (ii) Asserting an argument of patentability.

A prima facie case of unpatentability is established when the information compels a conclusion that a claim is unpatentable under the preponderance of evidence, burden-of-proof standard, giving each term in the claim its broadest reasonable construction consistent with the specification, and before any consideration is given to evidence which may be submitted in an attempt to establish a contrary conclusion of patentability.

109. A compelling inference can be drawn from the available evidence that (i) AutoStore's conduct before the U.S. PTO, seeking and obtaining the First through Fourth Fraud Patents, was intentionally misleading, and (ii) but for AutoStore's bad faith conduct, the First through Fourth Fraud Patents would not have issued. At present, a compelling inference that AutoStore's conduct was intentionally misleading can be drawn based at least upon (i) the timing and obvious inconsistency of the positions that AutoStore took before the U.S. PTO and foreign governmental entities, (ii) the fact that Onsagers represented AutoStore in all of the relevant proceedings, and therefore cannot feign ignorance of the facts that AutoStore failed to disclose to the U.S. PTO and the misleading nature of the representations that AutoStore made to the U.S. PTO, and (iii) AutoStore's motive to commit fraud based on (a) the history between AutoStore and Ocado, and (b) AutoStore's knowledge of Ocado's Cubic AS/RS and efforts to "work backwards" to claim a generic Central Cavity Robot in patents that could colorably be asserted against OSP's single-space robots.²³

²³ Irregularities in the declarations that AutoStore filed in the U.S. PTO with the First through Third Fraud Patents tend to further support an inference of fraud. In connection with the First Fraud Patent, AutoStore's prosecution counsel submitted a September 25, 2017 inventor

AutoStore's Fraud on the U.S. PTO Continues to This Day

110. AutoStore's fraud on the U.S. PTO has not stopped. At present, AutoStore has pending before the U.S. PTO a continuation of the '158 Application that issued as the Fourth Fraud Patent. That continuation application, U.S. App. No. 16/865,443 (the "'443 Application")—like the First through Fourth Fraud Patents—seeks additional claims directed to a generic Central Cavity Robot (although, this time, the claims are phrased as a "method for operating a bin storage system"). (Ex. 59.) The claims in the '443 Application are mere word games—rearranging the language in the First through Fourth Fraud Patents—and substantively the '443 Application seeks to claim nothing more than the generic Central Cavity Robot that AutoStore told the Oslo District Court, the Norwegian Patent Office, and international patent examiners was prior art.

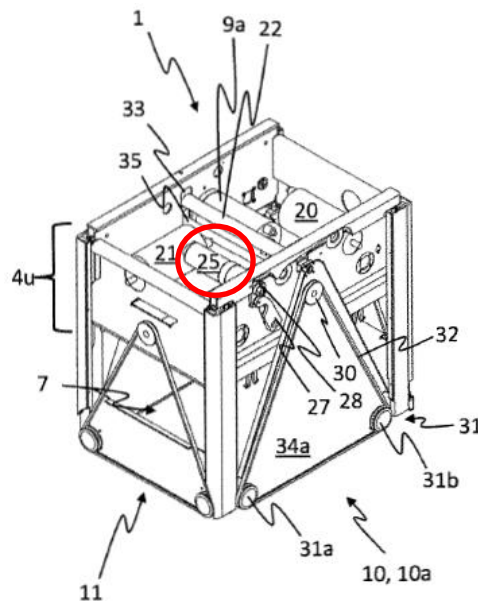
111. Moreover, although Ocado accused AutoStore of inequitable conduct in November 2020 in connection with the AutoStore ITC Action, AutoStore still has not complied with its obligation, pursuant to MPEP § 2001.06(c), to inform the U.S. PTO of the allegations in the pending prosecution of the '443 Application. In other words, at present, AutoStore is in flagrant violation of its duty of candor to the U.S. PTO, and presumably hopes that it will be issued yet another fraudulent patent before being caught.

declaration that purportedly was signed by the sole named inventor of the First Fraud Patent, Ingvar Hognaland. The signature on that document, however, appears to be very different from Mr. Hognaland's signature on an inventor declaration that AutoStore's counsel submitted in connection with an earlier patent application in 2015. Moreover, in connection with the Second and Third Fraud Patents, AutoStore's CEO Karl Lier submitted a substitute statement, claiming that Mr. Hognaland "refused to sign" a declaration to support the patent applications, which is one of the grounds for submitting a substitute statement, distinct from other grounds such as the inventor could not be located or the inventor was legally incapacitated (*e.g.*, due to illness). Mr. Hognaland's alleged "refusal" to sign the declarations, after readily submitting declarations for the earlier patents prosecuted by Osha Liang, further evidences bad faith conduct by AutoStore.

AutoStore's Fraud Was Not Limited to the Central Cavity Robot Patents

112. In December 2016—shortly before AutoStore was acquired by the private equity firm EQT in January 2017—AutoStore initiated additional patent prosecution before the U.S. PTO through which AutoStore fraudulently obtained another patent, U.S. Patent Nos. 10,294,025 (the “’025 Patent” or “Fifth Fraud Patent”). AutoStore has asserted the Fifth Fraud Patent against Ocado in the AutoStore ITC Action and AutoStore Virginia Action.

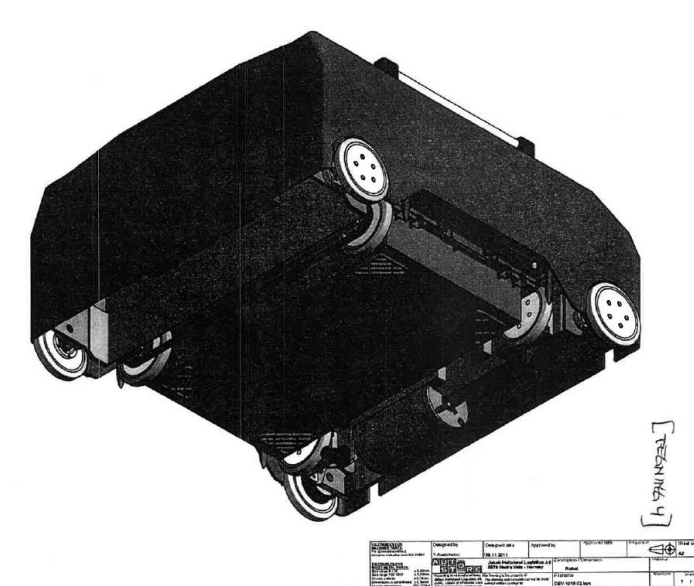
113. On December 15, 2016, AutoStore filed U.S. Patent App. No. 15/319,103 (the “’103 Application”), which was directed to a mechanism for a Central Cavity Robot to change its direction of travel (*i.e.*, a robot travelling in in the X-direction could switch to a perpendicular path of travel in the Y-direction). (Ex. 60.) The key feature of the claimed invention was that the displacement motor to effectuate the direction change (identified as 25 in the figure below) was located above the cavity in the Central Cavity Robot (Ex. 60):

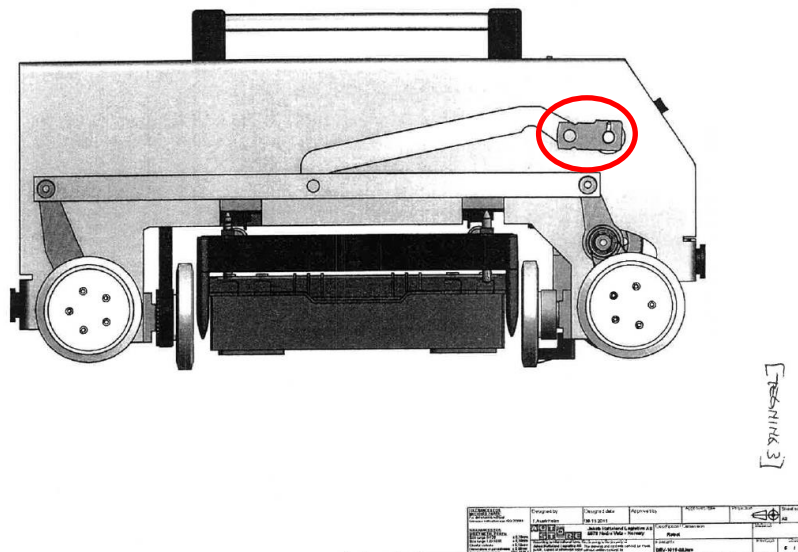


114. In prosecuting the ’103 Application, however, AutoStore never disclosed to the U.S. PTO that it had offered to sell a “chubby” robot to the Central Bank of Russia in 2010-2011 (*supra* ¶ 62), which had its displacement motor located above the robot’s central cavity (*i.e.*, the

allegedly novel invention claimed in the '103 Application). As AutoStore admitted in pleadings filed with the High Court of Justice in the United Kingdom in January 2021: “It is further admitted that the Bank Bots were designed by AutoStore for use by the Bank in around 2010 to 2011.” (Ex. 61 at ¶ 7(a).) The fact that AutoStore had offered its “Bank Bots” for sale to the Central Bank of Russia in 2010 and 2011 (and certainly no later than 2013) is further confirmed by (i) publicly available import records demonstrating that AutoStore imported system components into Russia in 2013 (*see* Ex. 62), and (ii) February 2014 press releases announcing the consummation of the commercial relationship and noting that it had started in 2010. (*See* Ex. 63.)

115. Moreover, in the Oslo District Court litigation in 2016, AutoStore relied on 2010 and 2011 design documents for the “Bank Bot,” which plainly show implementation of a displacement motor located above the cavity of the “Bank Bot” (circled in red in the second image below, Ex. 12 at 26–27):





116. The problem for AutoStore is that the '103 Application could not lawfully issue as a U.S. patent, pursuant to 35 U.S.C. § 102, because the invention was at least offered for sale more than one year before its claimed priority date. For the entire time period from December 2016 (when the '103 Application was filed) to May 2019 (when the U.S. PTO issued the Fifth Fraud Patent), AutoStore never disclosed to the U.S. PTO any information related to its prior offers to sell and sales of its alleged invention to the Central Bank of Russia. AutoStore cannot plausibly feign ignorance or mistake because AutoStore used the “Bank Bot” design documents in the Oslo District Court litigation in October 2016, *mere weeks before the '103 Application was filed in December 2016*. At no point during prosecution of the First through Fifth Fraud Patents (or thereafter) did AutoStore disclose to the U.S. PTO any information related to its commercial offers to sell and sales of “Bank Bots” to the Central Bank of Russia.

117. The “Bank Bot” information that AutoStore withheld unquestionably was material to patentability, and, based on the facts and circumstances, AutoStore withheld that information because it was obvious that the '025 Patent would not issue if the U.S. PTO had been aware of it. The MPEP provides: (i) “material information includes evidence of possible prior public use or

sales” (MPEP § 2001.06(c) (emphasis added)) and (ii) “information on enablement, *possible prior public uses, sales, [and] offers to sell*” (MPEP § 2001.04 (emphasis added)). Nevertheless, AutoStore withheld from the U.S. PTO evidence of its prior offers to sell and sales of its alleged inventions in connection with prosecution of the Fraud Patents.

AUTOSTORE ASSERTED THE FRAUD PATENTS AGAINST OCADO AND HAS HARMED THE COMPETITIVE PROCESS

118. It is axiomatic that U.S. antitrust law protects the competitive process and not particular competitors. AutoStore’s carefully choreographed scheme to obtain the First through Fifth Fraud Patents—and to continue to seek yet another fraud patent that is pending to this day—causes harm to the competitive process in the U.S. market for Cubic AS/RS. AutoStore’s conduct has harmed the competitive process by chilling and deterring robust competition from a nascent, but successful, first competitor (*i.e.*, Ocado), and by raising artificial barriers to entry for would-be competitors (*see supra* ¶¶ 47–48).

119. AutoStore’s harm to the competitive process stands to cause and has caused harm to Ocado. AutoStore has asserted five patents against Ocado in the AutoStore Virginia Action and AutoStore ITC Action—the Second through Fifth Fraud Patents and U.S. Patent No. 10,474,140 (the “’140 Patent”). The ’140 Patent (*i.e.*, the only patent that is not part of the fraud allegations in this complaint) is invalid, not infringed, and not enforceable, but even if that were not the case, it is trivial for Ocado to “design around” that patent. In contrast, because the Second through Fourth Fraud Patents purport to claim a prior art generic Central Cavity Robot, AutoStore is in a position to at least wrongfully threaten a complete shutdown of Ocado’s U.S. business.²⁴

²⁴ In contrast, Ocado has initiated a patent infringement lawsuit against AutoStore in the District of New Hampshire, and Ocado seeks only to stop AutoStore’s infringement of Ocado’s specific patented technologies, rather than shutting down AutoStore’s business entirely.

120. AutoStore’s assertion of the Fraud Patents against Ocado—and previous “cold war” accumulation of the Fraud Patents—has caused Ocado damage, which includes at least (i) unnecessary additional costs (*e.g.*, in efforts to defend itself against sham litigation and plan re-location of production facilities), (ii) lost profits due to reduced ability to compete with AutoStore in the Cubic AS/RS market outside the field of groceries, and (iii) lost business prospects due to the diversion of financial resources that Ocado would otherwise spend on further research and development to improve OSP and better compete with AutoStore for Cubic AS/RS business globally.

121. Finally, AutoStore’s ongoing U.S. patent prosecution—seeking additional Fraud Patents—indicates that unless AutoStore’s unlawful conduct is enjoined, AutoStore will continue to amass patents through fraud on the U.S. PTO indefinitely and will continue to inflict harm on the competitive process and Ocado’s business.

FIRST COUNT
(SECTION 2 OF THE SHERMAN ACT: MONOPOLIZATION)
15 U.S.C. §§ 2, 15(a), and 26

122. Plaintiffs incorporate and repeat the preceding paragraphs 1 through 121 above as if fully set forth herein.

123. The global market for Cubic AS/RS is a relevant market for the purposes of antitrust analysis for the reasons set forth in paragraphs 45–46 above.

124. AutoStore holds monopoly power in the global market for Cubic AS/RS because it has a market share in excess of 90%, and the market has high barriers to entry, as explained in paragraphs 47–48 above.

125. Ocado is a nascent and disruptive competitor that competes with AutoStore in the market for Cubic AS/RS, including in the United States.

126. AutoStore has obtained numerous patents through fraud on the U.S. PTO, including the Second, Third, Fourth, and Fifth Fraud Patents, which AutoStore has wrongfully asserted against Ocado in the AutoStore Virginia Action and AutoStore ITC Action.

127. Under the U.S. Supreme Court's decision in *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965), those actions constitute exclusionary and anticompetitive conduct.

128. AutoStore's exclusionary and anticompetitive conduct has caused harm to the competitive process in the U.S. Cubic AS/RS market, and has caused harm and continues to cause harm specifically to Ocado's business.

129. Defendants AutoStore AS, AutoStore Technology AS, and AutoStore System Inc. therefore have violated Section 2 of the Sherman Act.

SECOND COUNT
(SECTION 2 OF THE SHERMAN ACT: ATTEMPTED MONOPOLIZATION)
15 U.S.C. §§ 2, 15(a), and 26

130. Plaintiffs incorporate and repeat the preceding paragraphs 1 through 121 above as if fully set forth herein.

131. The global market for high-throughput Cubic AS/RS is a relevant market for the purposes of antitrust analysis for the reasons set forth in paragraphs 45–46 above.

132. Ocado is a nascent and disruptive competitor that competes with AutoStore in the market for high-throughput Cubic AS/RS, including in the United States.

133. AutoStore and Ocado are the only two competitors in the global market for high-throughput Cubic AS/RS, and AutoStore therefore has a dangerous probability of obtaining monopoly power in that market if its anticompetitive conduct directed to Ocado were to succeed.

134. Alternatively, even if the relevant market were expanded to include other forms of automated storage and retrieval systems, Cubic AS/RS is a highly differentiated product that is sold in a “bid market.” Ocado is AutoStore’s only and head-to-head competitor in that competitive process. AutoStore therefore has a dangerous probability of obtaining monopoly power in that market if its anticompetitive conduct directed to Ocado were to succeed.

135. AutoStore has obtained numerous patents through fraud on the U.S. PTO, including the Second, Third, Fourth, and Fifth Fraud Patents, which AutoStore has wrongfully asserted against Ocado in the AutoStore Virginia Action and AutoStore ITC Action.

136. Under the U.S. Supreme Court’s decision in *Walker Process Equipment, Inc. v. Food Machinery & Chemical Corp.*, 382 U.S. 172 (1965), those actions constitute exclusionary and anticompetitive conduct.

137. AutoStore’s exclusionary and anticompetitive conduct has caused harm to the competitive process in the U.S. market for (i) high-throughput Cubic AS/RS or, alternatively, (ii) Cubic AS/RS as part of a broader automated storage and retrieval system market. That conduct has caused harm and continues to cause harm specifically to Ocado’s business.

138. Defendants AutoStore AS, AutoStore Technology AS, and AutoStore System Inc. therefore have violated Section 2 of the Sherman Act.

THIRD COUNT
(TORTIOUS INTERFERENCE)
VIRGINIA STATE LAW

139. Plaintiffs incorporate and repeat the preceding paragraphs 1 through 121 above as if fully set forth herein.

140. Plaintiffs Ocado Group plc, Ocado Solutions Ltd., and Ocado Solutions USA Inc. have entered into contractual arrangements with Kroger and expect to obtain economic benefit

from those contractual arrangements, as explained in paragraphs 19 above. Ocado's contracts with Kroger are valid and enforceable agreements, and Plaintiffs have a reasonable expectation of economic benefit under them.

141. Ocado's contractual arrangements with Kroger, and expected economic benefit under those contractual arrangements, has been publicly known since at least May 2018. On information and belief, Defendants have known of those contractual arrangements since at least May 2018, and Defendants are aware of Plaintiffs' expectation of substantial economic benefits under them.

142. Defendants have fraudulently obtained U.S. patents through fraud on the U.S. PTO, and Defendants have wrongfully asserted those patents against Ocado in the AutoStore Virginia Action and AutoStore ITC Action, which are unprotected sham litigations since the actions are based on patents that AutoStore knows it obtained through fraud. Defendants have publicized their assertion of the Fraud Patents against Ocado, which, on information and belief, was something that Defendants and its owners did to further harm Ocado's business.

143. Defendants' wrongful conduct stands to interfere irreparably with Ocado's contractual arrangements with Kroger if not enjoined, and Defendants' wrongful conduct has slowed the progression of the partnership and increased cost, which have decreased Ocado's profit and stand to further decrease that profit during the pendency of the AutoStore Virginia Action and AutoStore ITC Action.

JURY DEMAND

144. Plaintiffs request a jury trial of all issues in this action so triable.

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs request judgment in their favor and relief:

A. Adjudging, finding, and declaring that Defendants have violated Section 2 of the Sherman Act.

B. Adjudging, finding, and declaring that Defendants have tortiously interfered with Ocado's contractual relationship with Kroger and expected economic gain from it.

C. An Order enjoining Defendants from seeking to enforce against Ocado the Fraud Patents, or any of their domestic or foreign counterparts or family members that have issued or may in the future issue.

D. An Order enjoining Defendants' from committing fraud on the U.S. PTO, and enjoining Defendants from prosecuting any pending patent applications or future applications in the same family as the Fraud Patents.

E. Awarding Plaintiffs compensatory damages in an amount to be proved at trial, with trebling of damages pursuant to Title 15 of the United States Code.

F. Awarding Plaintiffs pre- and post-judgment interest.

G. Awarding Plaintiffs their reasonable attorneys' fees, costs, and disbursements in this action.

H. Awarding Plaintiffs punitive damages.

I. Granting Plaintiffs such other and further relief as the Court may deem just and proper.

Date: February 2, 2021

Respectfully submitted,

/s/ Robert M. Tata_____.

Robert M. Tata

VSB No. 30101

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